SAMSUNG

High-Resolution Image Real-Time Recording

Digital Video Recorder SVR-1660 User's Manual

Thank you for purchasing a Samsung Digital Video Recorder.
Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

ENGLISH

Introduction

Thank you for purchasing the SVR-1660.
This is a user manual for SVR-1660. Before product installation and operation, please become thoroughly familiar with this user manual and other manuals referenced by this manual.
This user manual and the software and hardware described here are protected by the copyright law. Therefore, with the exception of copying for general use within the copyright law, copying and reprinting the user manual, either partially or in its entirety, or translating it into another language without the consent of Samsung Techwin, Inc. is prohibited.
This specification may be changed without prior notice for improvement of product performance.

Product warranty and limits of responsibility

The manufacturer does not assume any other responsibility concerning the sale of this product and does not delegate any right to a third party to take any responsibility on its behalf. Product warranty does not cover cases of accidents, negligence, alteration, misuse or abuse. In addition, no warranty is offered for any attachments or parts not supplied by the manufacturer.
The warranty period for this product will be for 2 years from the date of purchase. The following cases are not covered by the warranty and payment is required for repairs.

- **Malfunction due to negligence in handling by the user**
- **Deliberate disassembly and replacement by the user**
- **Connection of a power source other than a properly rated power source**
- **Malfunction caused by natural disasters (fire, flood, tidal wave, etc.)**
- **Replacement of expendable parts(HDD, FAN, etc.)**

※ Warranty period of HDD and Fan is one year after purchase.

Warranty only refers to the warranty covering products that have been paid for.
After expiration of the warranty period (2 years), examination and repair will be provided for a fee. Even during the warranty period, repair and examination of items outside the preceding warranty scope will require a payment.

This product is not for exclusive use of crime prevention but for assistance unit such as a fire or theft. Therefore, we never take any responsibility for the damage from any incident.

Various experience and technical is needed for installation of this product and individual installation might cause fire, electric shock, and defect. Any installation job should be performed by agency you purchased this product.

This manual is made by firmware version 1.0.0 basis.
Content of this manual can differ by Firmware or Software upgrade, and standard and appearance of product is changeable partly without prior notice to users.

Contents

Chapter 1. Safety Cautions 8

1.1 Symbols displayed for each item 8

Chapter 2. Summary 11

2.1 Features 11

Chapter 3. Product Description 14

3.1 Front part 14

3.2 Rear Part 15

3.3 OSD MENU structure 17

3.4 Function Menu 17

3.5 Factory default setting 18

Chapter 4. Monitoring 24

4.1 Basic Screen view 24

4.2 Single image view in full screen 24

4.3 Multi Screen view 24

4.4 User Sequence view 24

4.4.1 Basic System mode 25

4.4.2 User Sequence mode 25

4.5 Event Screen view 26

4.6 Enlarged Screen view 27

4.7 Pause Live screen 27

4.8 PTZ Control 27

4.8.1 Pan/Tilt Control 27

4.8.2 Zoom/Focus Control 28

4.8.3 Load Preset application 28

4.8.4 Save Preset application 28

4.8.5 Auxiliary On application 28

4.8.6 Auxiliary Off application 28

4.9 Screen Lock Control 28

4.10 Application of SPOT monitor 29

Chapter 5. Playback 30

5.1 Various Playback mode 30

5.1.1 Basic Screen Playback (9 division screen) 30

5.1.2 Various Playback functions 30

5.2 SEARCH mode 31

5.2.1 Time Search 31

5.2.2 Calendar Search 32

5.2.3 Event Search 32

5.2.4 Thumbnail Search 33

5.3 Copy 34

5.3.1 CD/DVD Copy 34

5.3.2 RE4 35

5.3.3 AVI 37

Chapter 6. Configuration 38

6.1 Record Setup 38

6.2 Time Setup (System Time) 38

6.2.1 Method of Time Setup 39

6.3 Camera Setup 40

6.3.1 Method of Camera Setup 41

6.4 Quick Record Setup (Quick Setup) 42

6.4.1 Method of Quick Record Setup 43

6.5 Schedule Recording 43

6.5.1 All Setup 43

6.5.2 Setup by Channel 44

6.6 Event Recording 45

6.6.1 Event Source Setup 45

6.6.2 All Event Record Setup 47

6.6.3 Manual Recording Setup 48

6.7 Audio & Other Setup (Audio Recording) 49

6.7.1 Audio Setup 49

6.7.2 Audio Mix 50

6.7.3 Record No Video 50

6.8 Monitor Setup 50
6.9 Event Setup 52
6.9.1 Event 52
6.9.2 Text 54
6.9.3 D-I/O 55
6.9.4 Event Action 56
6.9.5 Network 57
6.9.6 xDSL 58
6.9.7 DDNS 59
DDNS Registration 59
DDNS Registration procedure 59
6.9.8 NTP 63
6.9.9 Serial 64
6.10 System Setup 65
6.10.1 Setup 65
6.10.2 Disk Setup 67
6.10.3 Security 69
6.10.4 Time Schedule 69
6.10.5 Special Time 70
6.11 Exit 71
Chapter 7. Web Viewer 73
7.1 LOGIN 73
7.2 Connection User setup 74
7.3 Usable Browser 75
7.4 Monitor 75
7.4.1 Screen division & Image location change 76
7.4.2 Moving Playback 76
7.4.3 Channel On/Off 77
7.4.4 Sensor indication 77
7.4.5 Relay operation 77
7.4.6 Microphone use 78
7.4.7 Event Data 78
7.4.8 Image Recording & Image Storage 78
7.4.9 PTZ Use 79

7.4.10 Audio Use 80
7.4.11 Image Channel Close 80
7.5 Playback 81
7.5.1 Screen Division & Channel Change 81
7.5.2 Image Recording 81
7.5.3 Print 82
7.5.4 Web Monitor move 82
7.5.5 Channel On/Off 82
7.5.6 Recording period & Recording size check 82
7.5.7 Calendar Search 83
7.5.8 Function button at image below 83
Compatible HDD List 84
Compatible Media List 84
Specification 84
Trouble Shooting 86

Chapter 1. Safety Cautions

1.1 Symbols displayed for each item

Warning

Refers to information users need to know in order to prevent serious injury or death.

❖ **Before installation**

- ✓ Verify the supplied voltage (AC100V~AC240V) before connecting the power supply.
- ✓ Make sure the power supply is off before installation.
- ✓ Do not install in a very humid environment. Doing so may cause an electric shock or fire.
- ✓ Make sure ground line is connected to reduce electric shock risk.

❖ **During operation**

- ✓ Do not open the product cover except qualified personnel or system installer. Opening the product cover may cause an electric shock.
- ✓ Do not plug multiple appliances into one power outlet. Doing so may cause fire.
- ✓ Do not place dishes containing water or heavy objects on the product. Doing so may cause a malfunction.
- ✓ Do not use in areas containing inflammable materials like propane gas and gasoline or in areas that generate dust. Doing so may cause an explosion or fire.
- ✓ Do not touch the power line with a wet hand. Doing so may cause an electric shock.
- ✓ Do not insert a hand into the opening of the DVD. Doing so may cause an injury.
- ✓ Make sure conduction materials do not enter the cooling ventilator opening.
- ✓ Do not apply excessive force when pulling on the power cord. Damaging the cord may cause an electric shock or fire.
- ✓ Random replacement of built-in battery by other types of batteries may cause explosion.
- ✓ The battery shall be replaced by the same battery.
- ✓ The used batteries shall be disposed carefully because they can cause environment pollutions.

❖ **Dismantling and cleaning**

- ✓ Do not dismantle, repair or modify the product deliberately. Doing so may cause a damage, an electric shock or an injury.
- ✓ Do not use water, thinner or organic solvent for cleaning the product exterior. Doing so may cause a malfunction or an electric shock. Use a dry cloth to clean the exterior.

Caution

Provides information users need to know in order to prevent minor injury or product damage.

❖ **During installation**

- ✓ To get adequate ventilation, install the product with at least 15cm of space between the cooling ventilation opening and a wall.
- ✓ To prevent falling, install the product in a flat area . Dropping the product may cause an injury or a malfunction.
- ✓ Avoid areas exposed to sun light or heat since they may cause deformation or a malfunction.
- ✓ If a camera is installed while the DVR is recording, image in another channel may be disrupted. Start the storage after installing the camera is recommended.

❖ **During use**

- ✓ Make sure the product is not exposed to shocks or shaking when using the product or during moving.
- ✓ Do not move the product while it is in operation, and apply strong shocks to the product or throw the product.
- ✓ If hard disk drives other than those recommended are used additionally, abnormal operation may occur. Inquire at the point of purchase of the product before installing such a hard disk drive.
- ✓ Product warranty will not cover deliberate additional use of such hard disk drives.
- ✓ This product is a supplementary rather than primary means for preventing fire and theft. Our company is not responsible for incidence of incident or damage that may occur.

FCC Compliance Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which cause the user will be required to correct the interference at his own expense.

Correct Disposal of This Product

(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems) This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Samsung Techwin cares for the environment at all product manufacturing stages to preserve the environment, and is taking a number of steps to provide customers with more environment-friendly products. The Eco mark represents Samsung Techwin s will to create environment-friendly products, and indicates that the product satisfies the EU RoHS Directive.

Chapter 2. Summary

This unit is digital recording device that record the digitalized image input from 9channels to built-in hard disk and can playback.
When it set functions, it can easily setup through operating mouse & button at front.
Samsung SVR-1660 are digital image recording devices used to Bank, Apartment, Public offices, and are the independent product that system performance & safety are ensured. Because it saves to Hard disk instead of video tape, it can save high quality image when recording repeatedly. And it is useful for data searching because it can save and playback image data to digital file format. Also, as high quality image in real-time, large capacity recording device and digital product focus on users, these provide various functions such as Record/Playback/Copy functions simultaneously, Movement Detection, PTZ(Pan, Tilt, Zoom) control function, Password setup, real-time Audio data recording, maximum 10,000 event lists & log file saving etc.

2.1 Features

Monitoring Screen

It supports high quality live images and various monitoring screens.

- **Real time MPEG-4 images(480 frames)**
- **Various surveillance screen mode : Single, 4, 9, 10, 16divisions**
- **User Sequence(AUTO)**
- **Support various monitor output [2 Composite (including 1 Spot), 1 VGA]**
- **Pan/Tilt, Digital Zoom, PIP(Picture view inside Picture)**

Audio Recording

This supports real time audio input and recording function.

- **Simultaneous recording of 16 channels audio input in real time**
- **Input : 16channels(4 RCA in rear, 12 D-SUB), Output : 1 in rear**
- **Recording and Playback simutaneously**

Video Recording

It can record image high quality MPEG-4 real time image into max. 480 frames per second and max. 5 seconds at pre-event. Also, it protects privacy through COVERT (Hiding image) function.

- **High quality MPEG-4 realtime image recording**
- **4 steps recording resolution setup for the control of recording capacity**
- **Multi recording function for manual event & schedule event**
- **Sumultaneous operation for Recording/Playback/Copy/Network**
- **Each setup for each channel recording resolution & motion detection range**
- **Record setup (352x240 base) till max. 480 frame per a second**
- **Manuel & schedule recording function**
- **Video Loss detection function**
- **Record Event(Sensor, D-I/O, Video loss, Motion detection, Text) list**
- **Max. 5 seconds video recording function at pre event per each channel**

Search/Playback

It supports various convenient functions to search and playback.

- **Playback by Time, Date, Channel**
- **Increase convenient Search using mouse**
- **Forward/Backward Search of Pause screen**
- **Playback by Event(Sensor, Video loss, Motion detectin, Text) list**
- **Ease Search using Remote control/Jog-shuttle**
- **Digital Zoom Playback screen(Digital Zoom)**

Recording Device

It provides built-in HDD basically, and DVD-R, CD-R, USB memory can be used for recording according to users.

- **Basic supply item : Built-in Hard disk**
- **Various Copy device support : DVD-R, CD-R, USB memory**
- **Refer to the appendix on the back of the manual regarding the type of compatible media**
- **Hard disk expansion device(External recording device) : SVS-5E (Option as exclusive device)**

Network

It supports various networks like LAN, xDSL and can operate and manage main functions of product through exclusive PC viewer remotely.

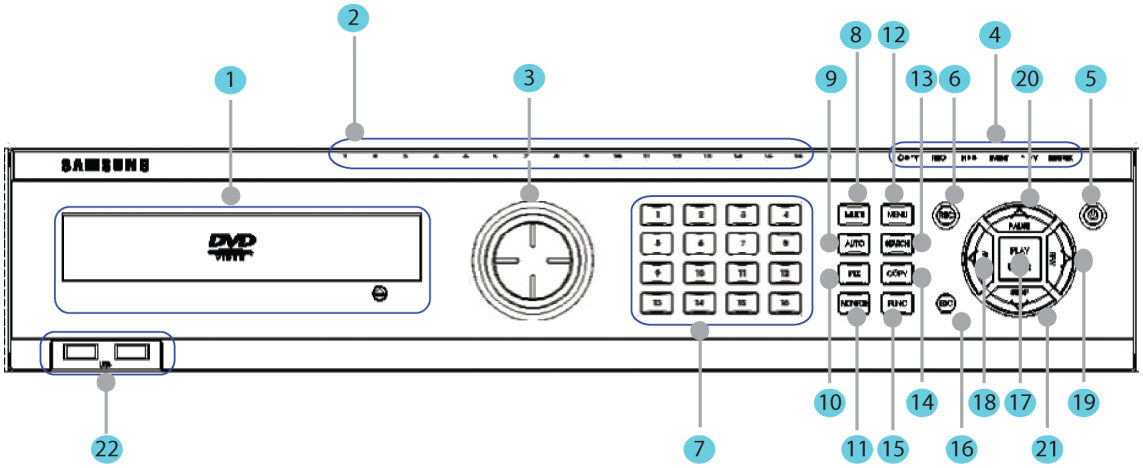
- **Transmission E-mail through TCP/IP, DHCP when event occured**
- **Live video monitoring remotely (Selectable whole or 4 divisions screen)**
- **PC Playback, Recording, Search & DVR control functions through network viewer**
- **Support Record, Search & Playback by time remotely**
- **Support 10/100Mbps Ethernet/xDSL**
- **Multiple DVR connection**

Others

- **GUI structure for the convenience of users and mouse support**
- **Easy firmware upgrading using USB memory**
- **Recorded image copy function through USB terminal**
- **Support PTZ control (SPEED DOME), PRESET function**
- **Multilingual support : Korean, English, Italian, Spanish, Japanese etc.**
- **Controllable 16 DVRs conveniently through 1 Remote control**

Chapter 3. Product Description

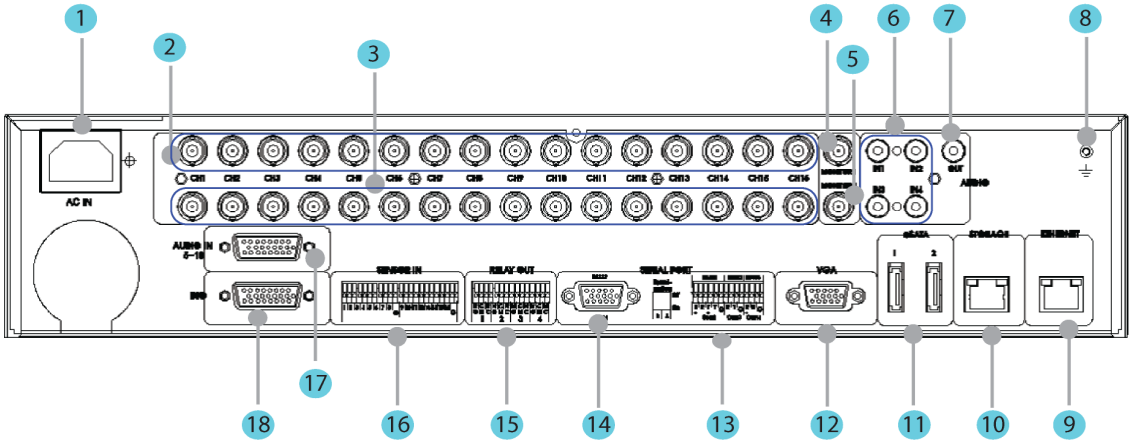
3.1 Front part



No.	Classification	Function
1	DVD-Multi for Copy	It uses when Copy recorded images through DVD/CD media.
2	Channel LED	It shows the status of image input and event action.
3	JOG/SHUTTLE	JOG can adjust set value in menu and control STEP function. And moving item between menus, Playback direction/Speed up & down, PTZ control is possible by Shuttle.
4	REC lamp	It indicates whether it records.
	HDD lamp	It indicates whether HDD works.
	NETWORK lamp	It indicates whether network is connected.
	EVENT lamp	It indicates whether event is detected.
	COPY lamp	It indicates whether Copy works.
	PLAY lamp	It indicates whether status of Play action.
5	Power button	It is On/Off power.
6	REC button	It starts or stops manual recording.
7	Channel button	Select Channel at Live image and Playback image.
8	MULTI	Change DIVISION from live & playback mode.
9	AUTO	It works and stops User Sequence.
10	PTZ	Starts or ends PTZ function.
11	MONITOR	Select basic monitor & spot monitor.

12	MENU	Enter into Menu.
13	SEARCH	Enter into Search mode.
14	COPY	Enter into Copy mode.
15	FUNC	Enter into Function mode.
16	ESC button	Use this when it step out from Menu or close pop-up window.
17	PLAY/ENTER	Enter into Playback mode or select Menu.
18	◀/REW	It moves & selects from menu, or changes rewinding playback speed from Playback mode.
19	▶/FFW	Move or select this from menu, or change forwarding playback speed from Playback mode.
20	▲/PAUSE	Move and select from menu, or Pause live image or playback image.
21	▼/STOP	Stop Playback in Playback mode.
22	USB1, USB2	It is connection terminal for external devices (Mouse, USB memory stick).

3.2 Rear Part



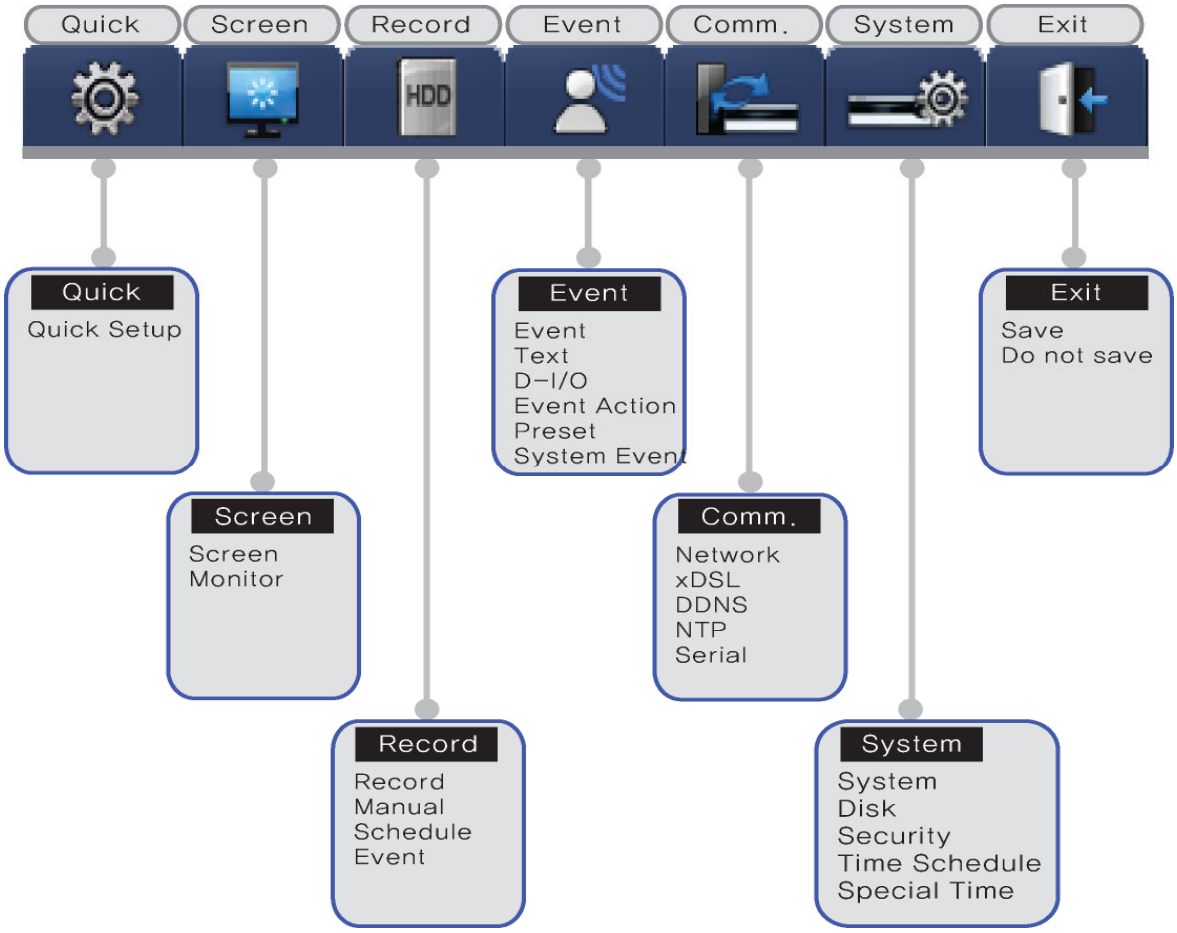
No.	Input/Output terminal name	Function
1	POWER IN	Socket for AC100V~AC240V power code
2	GROUND	Ground terminal between DVR and external device.
3	CH1~16	Connection terminal for BNC input of camera
4	LOOP OUT	Connection terminal for BNC output(Loop) of camera

No.	Input/Output terminal name	Function
5	MONITOR	BNC connection terminal for Monitor output
6	SPOT	BNC connection terminal for Spot monitor out
7	AUDIO IN(RCA)	RCA connection terminal for Audio input
8	AUDIO OUT	Speaker output terminal
9	ETHERNET	Network connection terminal (RJ-45)
10	eSATA	Connection terminal for external eSATA HDD or HDD for Copy
11	VGA OUTPUT	Output port to connect PC monitor
12	RS-232C	RS-232C terminal
13	RS-485	Connection terminal for expandable controller, Speed dome camera
14	RELAY OUT	Relay out terminal
15	SENSOR IN	External sensor input terminal
16	AUDIO IN(D-SUB)	Audio out D-SUB connection terminal
17	D-I/O	DIGITAL IN/OUT connection terminal

Refer to detailed description for installation & the use from “Install Manual”.

3.3 OSD MENU structure

Menu structure is same as below picture and for each configuration method per Menu, please, refer to the explanation from chapter 4 to chapter 6.



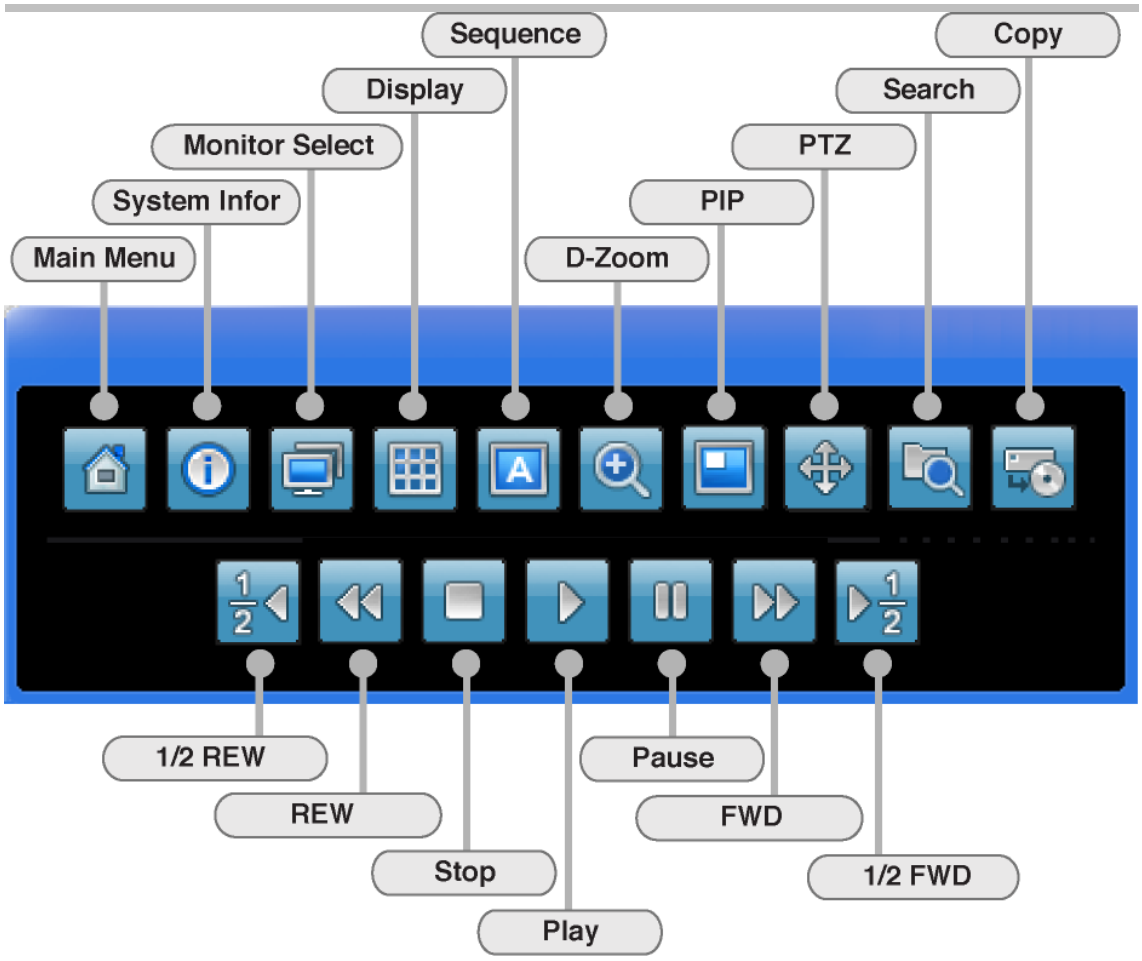
3.4 Function Menu

Function menu lets mouse to control all of the product function and operation.

When using each function, please, click Icon by left button of mouse.

And all functions of Function menu are available in the front function button, either.

Function menu structure is same as following



3.5 Factory default setting

To make the product factory default setup, execute according to following order.

System configuration->System->configuration.

If pressing “Enter” button after selecting default configuration, system will be initialized.

If window pops up showing the message “Warning, system will be initialized. Factory default”, selects “Yes” and press Enter button for Factory default.

Factory Default

Quick Setup			
	Schedule Recording		No Rec.
	Speed		1/0.75fps
	Quality		Q1
	Resolution		CIF
	Time		UTC 00:00 Dublin
			Off
			MM/DD/YYYY

				Current Time
		Language		English
Screen Setup				
	Screen	Channel Number		Ch1
		Title		Cam 1
		Activity		On
		Color		Color
		AGC		Enable
		Brightness		0
		Contrast		0
		PTZ	PTZ Home	Off
			PTZ Idle Time	5
			PTZ Port	None
			Address	0
	Monitor	Monitor Number		Monitor
		Switch to Event Screen		Off
		Covert Channel		All Uncheck
		User Sequence		All Not Set
		SEQ. Dwell Time		5Sec
		Multi Mode	4E	Ch1,3,5,7
		VGA Mode		800x600@56Hz
		Info Level		Uncheck remote controller ID
Record Setup				
	Record	Audio Channel		Ch1
		Recording		Off
		Gain		0
		Sync Video Channel		Ch1
		Audio Mix		Mix On
		Record No Video		Off
	Manual	Channel Number		All
		Macro		Not Use.
		Speed		1/0.75fps
		Quality		Q1
		Resolution		CIF

		Pre Event		1
		Post Event		1
	Schedule	Channel Number		All
		Schedule		Full Time
		Macro		No Rec.
		Speed		1/0.75fps
		Quality		Q1
		Resolution		CIF
		Special Time		No Rec.
		Event Recording		Off
	Event	Channel Number		
		Type	Sensor	Off
			MD	Off
			Text	Off
		Macro		Standard
		Speed		8fps
		Quality		Q3
		Resolution		CIF
		Pre Event		1
		Post Event		5
Event Setup				
	Event	Sensor		All, N.O
		MD		All
			Sensitivity	1
			Area	Set All
	Text	Recording		Off
		Sync Text With		Ch1
		Device		Manual
		Seek Header		Off
		Header 1		Header1
		Header 2		Header2
		Delimiter		0D0A
		Timeout(ms)		1000
		Lines		20
	D-I/O	Select D-I/O		Output
		Output Type		Sensor

	Event Action	Select Action		R1
		Action Duration		10
		Action Source		Full Time, Uncheck All
		Event Acton in Special Time		Full Time, Disable
	Preset	Channel Number		Ch1
		Preset		Sensor1, Not Set
	System Event	System Event Source		Uncheck All
		System Event Method		Uncheck All
Communication				
	Network	Type		Ethernet
		DHCP		Off
		IP addr		Current IP
		Net Mask		Current NM
		Gateway		Current GW
		DNS1		0.0.0.0
		Additional DNS		0.0.0.0
		Port		4000
		Band Width Limit(Mbps)		0.0
	xDSL	User ID		guest
		Password		*****
		Status		xDSL not connected
	DDNS	Interval		Off
		Server		www.samsungipolis.com
		ID		None
		Password		None
		Status		Not registered
	NTP	Sync With NTP		Off
		NTP Mode		Client
		NTP Server Loc.		Public
		NTP Local Server IP		0.0.0.0
		Interval		1(Hour)

	Serial	Serial Number		Com1
		Device		None
		Interface		RS232
		Baud Rate		9600
		Parity Bit		None
		Stop Bit		1
		Data Bit		8
System Setup				
	System	Remote Controller ID		Off
		DVR ID		1
		DVR Alias		DVR0
		Playback Deinterlace		On
		Language		English
		Firmware Update		>>
		Load/Save Configuration		>>
		Default		>>
		System Log		>>
	Disk	Repeat Record Mode		On
		Warning Lever		45(%)
		Block Playback		No Block
		Disk Manager		>>
		Disk Status		>>
	Security	User Password		Off
		Password		****
		Re-Enter		****
		Admin Password		Off
		Password		****
		Re-Enter		****
		Remote Setup		Enable
		Remote Relay		Enable
	Time Schedule	Weekday Start		Mon
		Weekday End		Fri

		Day Start		09:00
		Day End		18:00
	Special Time	Zone 1		00:00 – 00:00
		Zone 2		00:00 – 00:00
		Zone 3		00:00 – 00:00
		Zone 4		00:00 – 00:00
		Exception Days		>>
Save				
		Save		>>
		Do not save		>>

Chapter 4. Monitoring

If power on to DVR only, analog image of all channels connected to monitor mode appear on screen.

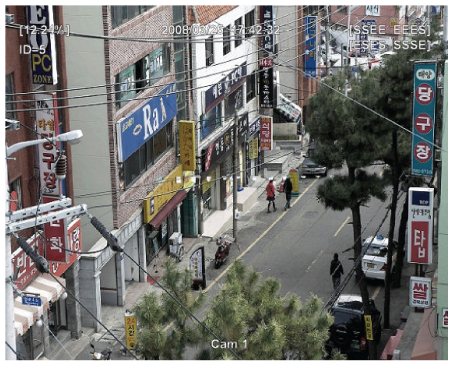
This is to utilize all monitoring mode of DVR.

4.1 Basic Screen view

- If Power connects, DVR is on automatically.
- All LED is On/Off in order and is booting.
- After booting, basic 16 divisions monitor screen appears.

※ If user's password is set, password input window appears.

4.2 Single image view in full screen



- Press channel button wants to see or click left mouse.
- Press [MULTI] button or click left mouse once again to move to division screen again.

4.3 Multi Screen view

- To see several channels simultaneously, it press [MULTI] button or click division mode wants to see by executing Display menu among Function menu.
- It changes to 4A, 4B, 4C, 4E, 9A, 9B, 10A, 16 division screen modes whenever pressing [MULTI] button.

4.4 User Sequence view

User Sequence mode is set by pressing [AUTO] button at front after setup from 1 to 9 from User Sequence setup or set up channels wants to see partly, or click Auto menu of Function menu. It stops by pressing [AUTO] or click Auto menu of Function menu again.

When User Sequence is not set, pressing [AUTO] button does not operate

Sequence.

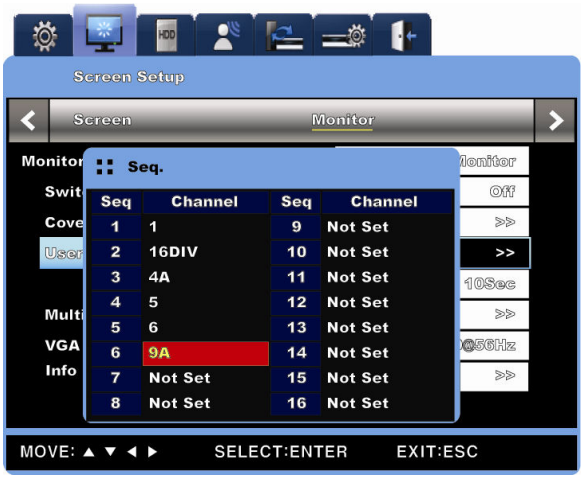
4.4.1 Basic System mode

- If it uses [AUTO] button, it can setup sequence channels to view automatically.
- Press [MENU] button to set up sequence period. When using mouse, press menu button at Function menu.
- Move to “Screen Setup” from OSD menu.
- Move to “Monitor” under “Screen Setup”, and press [ENTER] button or click left mouse.
- Select “SEQ. Dwell Time” and set wanted value from 1 to 16 seconds. When it sets to ‘Off’, user sequence view does not operate.

- User Sequence mode is usable by pressing [AUTO] button from every division mode.
- Press [AUTO] button once again to exit from User Sequence mode.

4.4.2 User Sequence mode

- Press [AUTO] button. When using mouse, press Auto button from Function menu.
- User Sequence sets the item of User Sequence Conf. from “Monitor” of OSD menu.


Screen Setup
Screen
Monitor
Seq.
Seq Channel Seq Channel
1 1 9 Not Set
2 16DIV 10 Not Set
3 4A 11 Not Set
4 5 12 Not Set
5 6 13 Not Set
6 9A 14 Not Set
7 Not Set 15 Not Set
8 Not Set 16 Not Set
MOVE: ▲ ▼ ◄ ► SELECT:ENTER EXIT:ESC

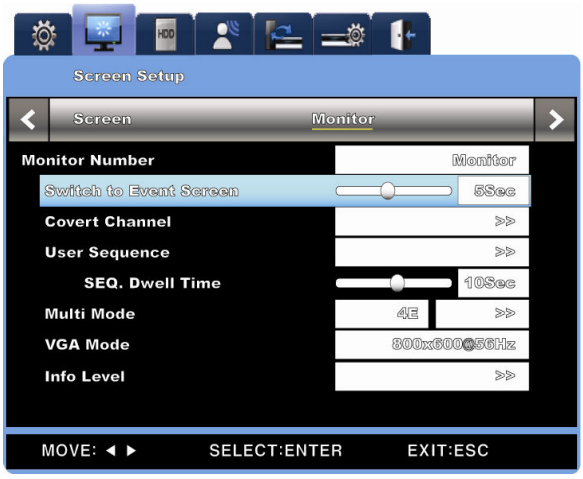
Reference

1. User mode can define maximum 16 users.

2. Above example picture is defined 6 sequences and shows in order to Single screen (1) → All screen(9DIV) → 4 division screen(4A) → Single screen(5) → Single screen (6) → 4 division screen (4B).

4.5 Event Screen view

- In case of Event, it can sets relevant screen to Pop-up automatically.
- Setup period of relevant Pop-up sets relevant time from “Switch to Event Screen” under “Monitor” menu.
- When Event occurred at several channel simultaneously, division channel as many channels as related appears. For example, if event occurs to 3 channels together, the images appear to 4 division screen automatically. Press one of any channel button among pop-up image to return to original screen.



1. If it sets Switch to Event Screen to Off, Event pop-up function does not work.

2. If it sets Switch to Event Screen to Keep, it shows screen popped up until

Pressing any button and returns to Previous screen by pressing any button.

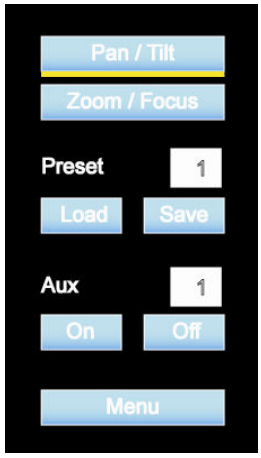
4.6 Enlarged Screen view

- When pressing [FUNC] at single image full screen mode and select [D-ZOOM] , it can view enlarged image by selecting +button and Enter button or click left mouse button.
- In case of selecting [D-ZOOM] , default of enlarged screen location is the center. It can move enlarged screen location to 18 steps left/right and 12steps upper/lower.
- Use direction key to move screen.
- Select button and press Enter button, or press left mouse button to return original screen.

4.7 Pause Live screen

- It can pause live screen like Playback.
- Press [PAUSE] for Pause live screen, and press [PAUSE] button again to return to live screen.

4.8 PTZ Control



It connects PTZ controller to DVR, and it can control PTZ while viewing image in real time if it sets relevant protocol to “Serial Setup” menu.

To execute PTZ, press PTZ button from front function button and select PTZ function through Func button.

- Move to the channel wants to control.
- Press PTZ button or click PTZ button from Function menu using mouse.
- PTZ menu (Pan/Tilt, Zoom/Focus, Load Preset, Save Preset) appears
- After selecting wanted menu among them, click [ENTER] using mouse.

4.8.1 Pan/Tilt Control

This menu is used when it utilize Pan & Tilt from real time monitoring mode.

- Select Pan/Tilt from PTZ mode.
- It can utilize Pan using left/right direction key at front part and click left/right on screen, Tilt using Up/down direction key or click up/down on screen.

4.8.2 Zoom/Focus Control

This menu used to utilize Zoom & Focus functions from real time monitoring mode.

- Select Zoom/Focus from PTZ mode.
- It utilizes for Zoom & Focus functions through direction key at front part or mouse wheel.

4.8.3 Load Preset application

This menu is used when it moves to Preset location from real time monitoring mode.

- Select Preset number using up/down button or mouse wheel.
- If Preset is set, select Load and press Enter button or click mouse.
-

4.8.4 Save Preset application

This menu used when it sets Preset location from real time monitoring mode.

- Control camera location using 'Pan/Tilt' and 'Zoom/Focus' menu.
- Select Preset number using up/down button or mouse wheel.
- If Preset is set, select Save and press Enter button or mouse click.

4.8.5 Auxiliary On application

This menu used when it uses special function of PTZ device from real time monitoring mode.

- Set Aux number using up/down direction key or mouse wheel.
- Select On, and press Enter button or mouse click
- (Total 16 Aux functions are available.)

4.8.6 Auxiliary Off application

- Set Aux number using up/down direction key or mouse wheel.
- Select Off, and press Enter button or mouse click
- This menu used when it stops working special function of PTZ device.

4.9 Screen Lock Control

This function is to prevent control or setup from any user who has no right.

To use this function, it needs to set "User Password" first. (It needs to set Admin Password to set User Password)

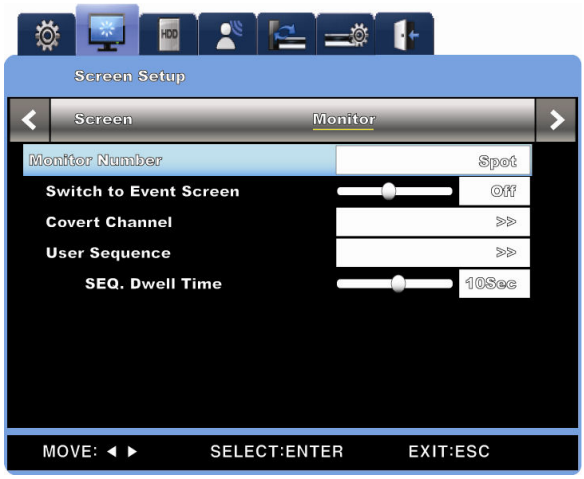
If it press [ESC] button more than 3 seconds, "Screen Locked" message is loaded at lower screen and Lock mode works. When "User Password" sets to Off, "Enable user password first" message is loaded on screen.

In case of Lock mode, any button does not work. And it must be released to operate any function button.

Whatever any button is pressed at Lock mode, it loads window asking User Password. And

Load mode is released through input of relevant Password.

4.10 Application of SPOT monitor



Basic monitor is used for all functions of DVR like Menu setup, Live images (16 divisions) and Playback, and Spot monitor can be used for two functions of Single channel live image and Event pop-up image.

Chapter 5. Playback

5.1 Various Playback mode

5.1.1 Basic Screen Playback (9 division screen)

- Press [PLAY] button from monitoring mode or click Play button from Function menu using mouse.
- If it press [PLAY, >] button and [FWD] button for changing speed, it playback image forwarding in 1x speed set first.
- If it presses [REW] to change speed, it plays rewinding in a speed set first.

When doing playback by 9 chs, possible playback Frame per second is 2 fps (displays only I Frame). Therefore, total Frame per second for 9 chs to playback is 18 fps and for 1 ch, 30 fps as many as its max recording performance.

Press Playback button from Monitor division mode to play back recording image in 9 divisions.

5.1.2 Various Playback functions

PLAY : Playback in 1 speed. When using mouse, click Play button from Function menu.

It playback multi image always through pressing [PLAY] button from monitor mode. Also, when Playback by pressing [PLAY] button, it playback recording image from the time user played recently.

PAUSE : It pause Playback. When using mouse, press Pause button from Function button.

STOP : Stop Playback. When using mouse, press Stop button from Function button.

FWD : Whenever pressing button, playback speed is changed. (x2, x4, x8, x16, x32, x64, x2, x4 ~~). At Live, press [FWD] button to Play recorded images in a minute ago from present live time. It changes Play speed Function through button.

REW : It changes Playback speed in reverse whenever pressing a button. (x2, x4, x8, x16, x32, x64, x2, x4~~)

At Live screen, it Reverse Play recording image from the time of last recorded area by pressing REW button. It also changes the speed by pressing at Function menu.

STEP FORWARD : While Play, it plays forward by a frame of image if it press [FWD] button at the stage of pressing Pause button. It returns to normal Playback again by pressing [PLAY] button.

STEP REWIND : While Play, it play in reverse by a frame if it press [REW] button at the stage of pressing Pause button. It returns to normal Playback again by pressing [PLAY] button.

1/2 REWIND : Play forward in 1/2 speed by pressing button at Function menu.

1/2 FORWARD : Play reverse in 1/2 speed by pressing button at Function menu.

5.2 SEARCH mode

This is menu to playback data in specific time through searching Time or Log.

There are Time, Calendar, Event and Thumbnail in Search mode.

Press Search button in Front part or click button in Function menu to enter into Search mode.

5.2.1 Time Search

Input Data & Time to search, and playback image moves to searched date & time by selecting Search.

Start-REC Time : It indicates Date & Time starts recording first.

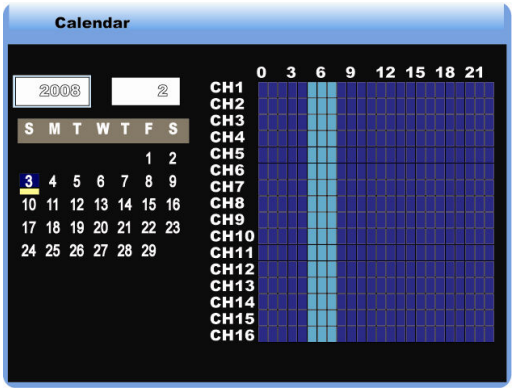
End-REC Time : It indicates Date & Time of recording the most recent.

Search Time : Select Date & Time wants to search from starting time to present time of Recording.

Search Button : Search the image of time input.

5.2.2 Calendar Search

It can use more easily search the wanted point using calendar.



Year : It selects the year to search. It can change the year using wheel of mouse.

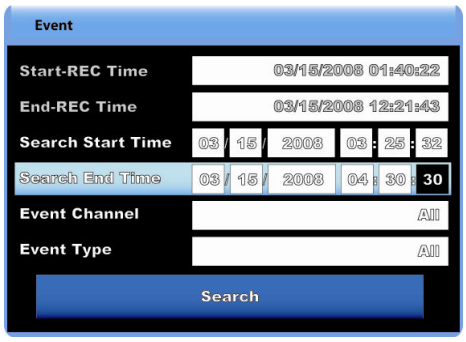
Month : It can select the month to search and change the month using wheel of mouse.

Selecting Date : Press Enter button by moving to the date for searching through the calendar. When using mouse, it can select date and search time base using wheel.

Selecting Time : Among the time period that image recorded, it starts Play through Enter button after selecting the time period wants.

5.2.3 Event Search

It can appoint specific period and divide to all channels, some channels, All, MD, Sensor to search. When using button at front, it can change Date/Time using up/down button. And when using mouse, it can set the part wants to change through rolling wheel. Selected result is shown to Event Search window in separate list. It can playback relevant date, Time by pressing Enter button after selecting searched list or rolling wheel.



Start-REC Time : It indicates Date & Time starts recording first.

End-REC Time : It indicates Date & Time of recording the most recent.

Search Start Time : Input starting date & time to search. Move the parts to setup using direction button and press Enter to change the value. When using mouse, click the part to change and change the value using the wheel.

Search End Time : Input ending date & time to search. Move the parts to setup using direction button and press Enter to change the value using up/down button. When using mouse, click the part wants to change and change the value using the wheel.

Event Channel : Select channel wants to search.
It can select All, Ch1 ~ Ch 9

Event Type : Select Event type wants to search.
It can select All, MD, Sensor, V-Loss, Text

5.2.4 Thumbnail Search

It appoints specific time through up/down button at front or mouse wheel and searches specific channel in regular interval. Searched result is shown in thumbnail type. It selects searched thumbnail to move relevant date, time and play it.

Channel : It selects the channel wants to search. After selecting, it can change the value using up/down key or change it through mouse wheel.

Start Time : Input the starting date & time wants to search. After moving to the location to change using left/right key and press Enter, it can change the value through up/down key or mouse wheel.

Interval : It divides into regular base for searching and indicates result. It can change through up/down button or mouse wheel.

Image view : If user pushes “Search” button, 16 images per second will be displayed based on the start time.
If user wants to return to search mode, please use “Func” button or mouse wheel.

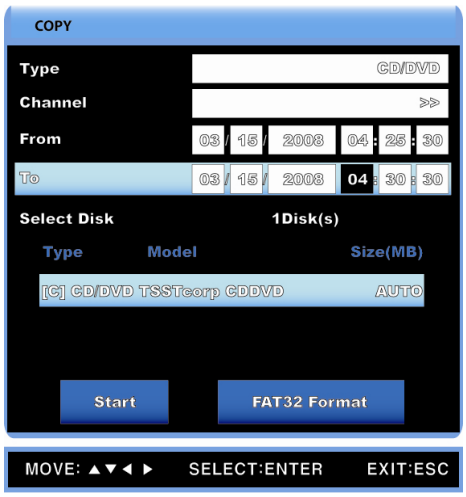
Image Selection : Click searched image through Thumbnail search and start Play from the time selects. It can Play relevant image through Enter button or mouse click.

5.3 Copy

This menu is to Copy recorded image. There are DVD, RE4, and AVI in Copy type.

The way to execute copy menu is to push the [copy] button on the front and click menu.

5.3.1 CD/DVD Copy



Using CD & DVD, it can detect CD & DVD for Copy and calculation Copy capacity automatically.

Type : Select DVD using up/down key or mouse wheel. After pressing Enter, it can change using up/down key or mouse wheel.

Channel : Among 16 channels, it can select a part or all channels. Select the location of Channel and select it using Enter button or mouse wheel.

From : It appoints starting date & time wants to. It can set up using up/down button at front or mouse wheel.

To : It appoints the last date & time wants to Copy. It can set up using up/down button at front or mouse wheel.

Selecting Disk : Select media wants to Copy. Press Enter at Select Disk part and

select disk.

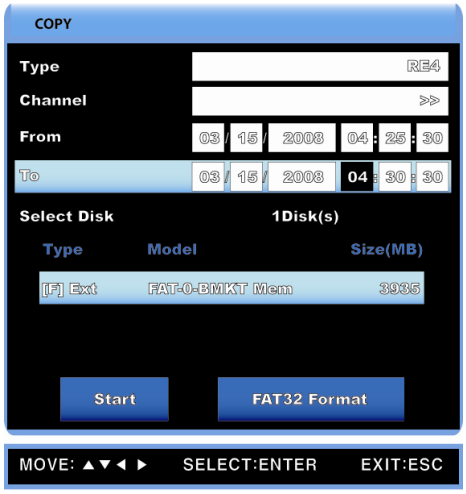
Start : Start COPY. Press Start button through Enter button or click left mouse button.

FAT32 Format : Format USB disk or HDD to FAT32.
When DVD Copy, it does not use. When using media, it executes format first to use by selecting FAT32 Format button and press Enter button or left mouse click.

Media available when using CD/DVD copy is as below.

	Manufacture		**Manufacture**
DVD-R	Imation(Exhortation 16X) Sony(Exhortation 16X) Mitsubishi(Exhortation 16X) TDK(Exhortation 16X)	**CD-R**	Imation(Exhortation 16X) Sony(Exhortation 16X) Mitsubishi(Exhortation 16X) TDK(Exhortation 16X)

5.3.2 RE4



It can Copy using HDD, USB memory. It can playback using MiniPlayer, Network Manager. Select channel location and open the channel list as following using Enter button or mouse wheel.

Type : Select RE4 using up/down button or mouse wheel.

Channel List : Press Enter from Channel part to pop-up channel selection window or pop up Channel List using mouse wheel.

Selecting Channel : Among 16 channels, it can select a part or all channels. Select the channel from Channel list and press Enter button or click left mouse button.

From : Appoint starting date & time wants to Copy. After selecting the part wants to change, it can setup using up/down key or mouse wheel.

To : It appoints the last date & time wants to Copy. It can set up using up/down button at front or mouse wheel. Set up as same as above, From.

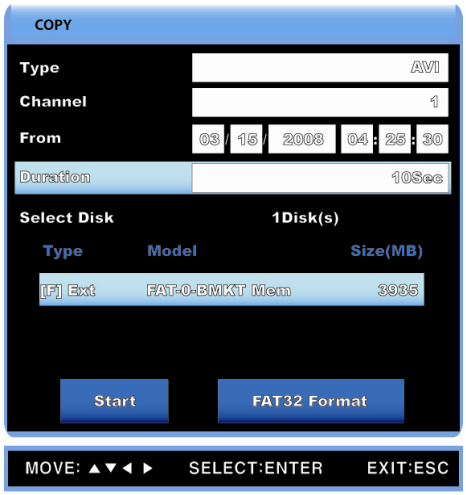
Select Disk : Select the media wants to Copy. Press Enter from Select Disk or use mouse to select.

Start : It starts COPY using Enter button or mouse click.

FAT32 Format : In case of unformatted USB memory or HDD, format to FAT32 using Enter button or mouse click and Copy.

It cannot playback Copy file that is not copied 100% from PC normally.

5.3.3 AVI



It is to Copy a part of one channel selected to USB memory or HDD.

Type : Select AVI using up/down button or mouse wheel.

Channel : Select the channel wants to Copy using up/down button or mouse wheel.

From : Appoint starting date & time wants to Copy. Move to time, year etc using left/right button and change Date/Time using up/down button. When using mouse, left mouse click to the location wants to change and change it using wheel.

Duration : Appoint Copy time. Copy from starting time to time appoints. It sets using up/down key or mouse wheel.

Select Disk : Select media want to Copy. Select media from Select Disk through Enter button or mouse click.

Start : It starts COPY. It starts using Enter button or mouse click.

FAT32 Format : In case of unformatted USB memory or HDD, format to FAT32 using Enter button or mouse click and Copy.

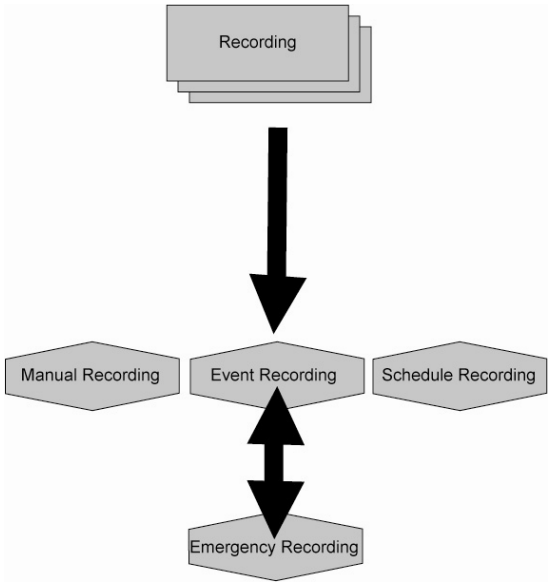
If copy file doesn't playback in PC, please install an Integration codec.

Chapter 6. Configuration

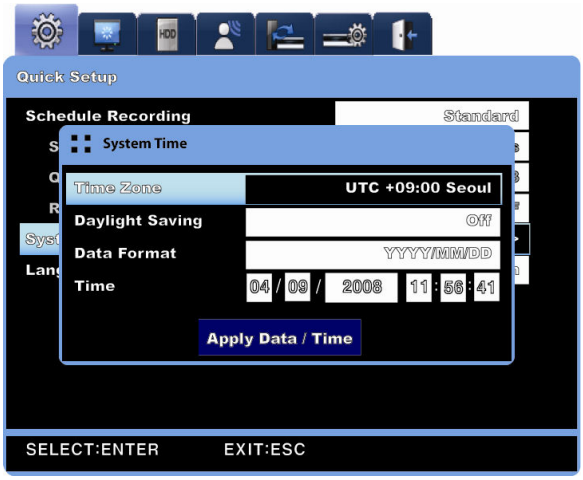
6.1 Record Setup

There are 4 different modes to DVR recording, and it can see Setup relation like the following structure of picture. It explains Recording type briefly.

Refer to each item below for the detailed setup relate to Recording.



6.2 Time Setup (System Time)



Time setup of production is required before Record Setup.

It is very important to setup to local time for recording data protection of product. It does not recommend changing the time during recording. Factory set to Time zone setup is “UTC 00:00

Dublin".

6.2.1 Method of Time Setup

When it changes the time during the condition of recording already, it recommends Copy for important data before the time change because it changes the time of image recorded.

- Press [MENU] at front or Menu button at Function.
- Move to "Quick Setup" menu.
- Select "System Time" of "Quick Setup" using Enter button or wheel.
- When pressing button in normal order, following 6.2 Time setting screen is appeared.
- When moving to inferior menu of each, click [Enter] or mouse after selecting through direction key or mouse.

Time Zone

Select time zone using front direction key or mouse wheel. It changes time zone whenever pressing direction button. (To move to previous menu click right mouse or press [Enter] at front this is all the same at OSD menu.)

Daylight Saving (Summer Time application)

This menu synchronizes with Time some setup menu. Namely, this menu is activated when summer time zone is selected to the area applies at Time zone setup menu. Summer Time zone is programmed to synchronize the same with time zone of existing Microsoft Windows. Here sets top whether it sets relevant summer time to product installed in Summer time application area.

Reference **Refer to "NTP" of Network Setup for the detailed explanation relate to NTP**

Date Format

Set the method of Time indication. Setup the indication wants among "MM/DD/YYYY", "YYYY/MM/DD", "DD/MM/YYYY" using direction key or mouse wheel

Date/Time

It moves to Year, Month, Date and Time in order through left, right direction key. And each menu setup is available using up/down key or mouse wheel.

Apply Date/Time

To apply Date/Time set value must press “Apply Date/Time” button. It indicates dialog box as follows by pressing business.

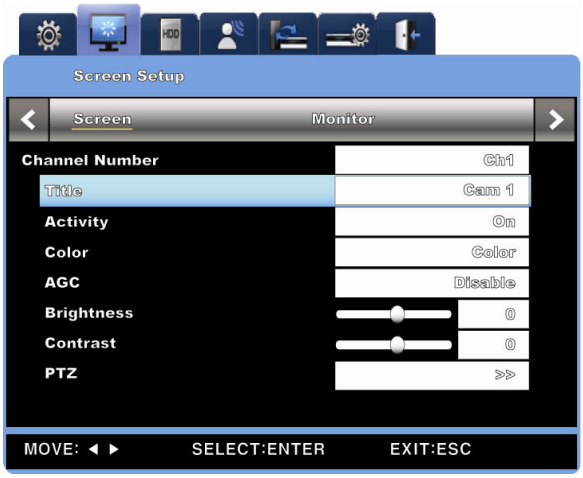
Except “Date/Time” setup, other setups are saved automatically when it is closed completely, but “Date/Time” setup does not saved automatically because it can affect to HDD recording file system critically. When it applies the content changed, it must press [Apply Date/Time] button to apply.

6.3 Camera Setup

This menu is to setup the condition for each camera connects to the product. It can set [Name], [Status], [Color/BW], [Auto control], [Brightness], [Contrast], [PTZ part setup] of cameras connect through Camera setup menu. Refer to following item for each explanation of each menu.

It cannot use NTSC & PAL cameras to the product together. For example, if it connects NTSC cameras to 1CH~5CH, it cannot connect PAL cameras to 6CH~16CH. Also in case of the change NTSC camera to PAL Camera, it must reboot product after connecting camera for normal work.

Set value is applied to Monitoring and Search identically.



6.3.1 Method of Camera Setup

It moves to “Cam#1 ~ Cam#9” under “Camera” of Screen Setup using direction key or mouse wheel after pressing [MENU] button..

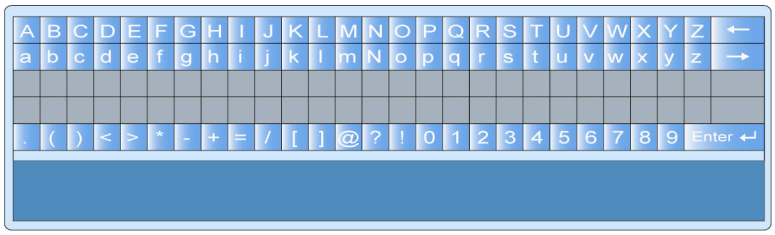
6.3.1.1 Title

Set up Camera Name.

Relevant character setup menu appears if it press [ENTER] or mouse click.

Character input window appears when it inputs characters.

According to menu, Character input window can be different but same setup.



- Character input uses direction button.
- Press relevant character when using mouse.
- Select character wants by pressing up/down, left/right button.
- After selecting input character, press [Enter Button] button to input.
- When delete input character, move back using [🡐] button
- Press [➔] for a space between characters.

6.3.1.2 Activity

It can On or Off camera status.

It sets up On/Off using left/right button or mouse wheel after pressing [ENTER] button.

To increase frame rate when recording or network monitoring sets Off the unused channel.

6.3.1.3 Color

After pressing [ENTER], it sets “Color / B/W” using left/right button or mouse wheel.

6.3.1.4 AGC (Auto Gain Control)

AGC is to control video signal input range of camera connects.

It sets “Enable/Disable” using left/right button or mouse wheel after pressing [ENTER].

6.3.1.5 Brightness / Contrast

It can control Brightness & Contrast of image.

After pressing [ENTER], it can set the value wants among the each from “–9” to “+9” using

left/right button or mouse wheel.

6.3.1.6 PTZ

It sets PTZ Home, Idle Time, Port, Address relate to PTZ device.

6.3.1.6.1 PTZ Home / PTZ Idle Time

This is menu to setup camera supports PTZ (Pan/Tilt/Zoom), and it moves to PTZ assigned when there is no movement during specified time.

It sets Preset number & Time using left/right button or mouse after pressing [ENTER].

6.3.1.6.2 PTZ Port

This is menu to setup camera supports PTZ (Pan/Tilt/Zoom).

It sets PTZ port connects to relevant channel using left/right button or mouse wheel after pressing [ENTER].

6.3.1.6.3 Address

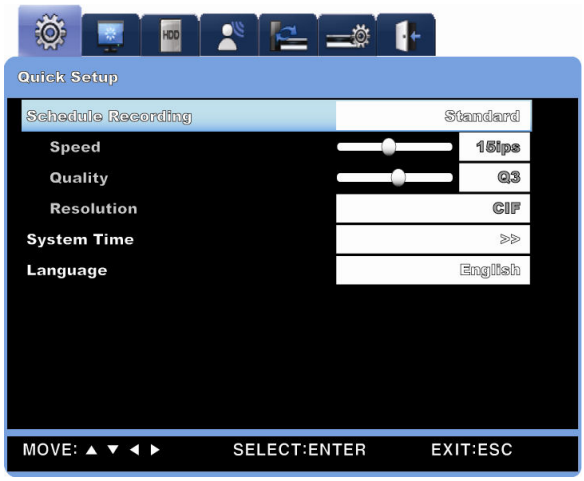
It is setup menu for the connected camera that can support PTZ (Pan/Tilt/Zoom).

It can setup base address of PTZ device using up/down button or mouse wheel after pressing [ENTER] button.

Refer to "7.4.9 PTZ use" for the PTZ camera list can setup and method of detailed setup.

6.4 Quick Record Setup (Quick Setup)

Quick Setup is to setup recording simply in same condition of all analog channels.



6.4.1 Method of Quick Record Setup

- Select ‘Quick Setup’.

Recording Speed/Quality

There are all 5 setup conditions. Default set value is ‘No Rec.’ that means does not record.

No Rec. / Low / Standard / High / Custom

Except “Custom”, setup condition sets to synchronies ‘Speed (fps)’, ‘Quality’, ‘Resolution’ automatically.

Resolution

There are total 3 conditions. (CIF/ HALF/ D1)

Resolution setup is changeable when ‘Recording Speed/Quality’ is set to Custom.

Method of Record check

If Record Setup is completed normally, ‘REC LED’ at front part blinks.

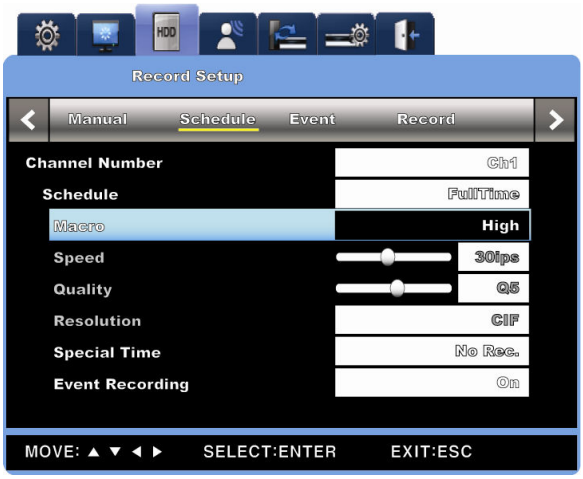
It indicates recording relevant channel presently to [R] by channel.

6.5 Schedule Recording

This menu can setup Record by channel or all and can setup recording condition by time schedule. After user sets ‘Quick Setup’, this menu changes existing setup value to new setup value.

6.5.1 All Setup

It is similar to recording setup of Quick Setup, and set all analog channels in same condition. It sets channel to All and sets Macro among Low, Standard and High after setup schedule to Full-time.



6.5.2 Setup by Channel

It can set Time Schedule, Macro differently by each channel.

It sets 1~8CH to Weekday day, Low, and can set 9~16 to Full Time, High

Recording Speed/Quality

There are total 5 setup conditions. (No Rec./Low/Standard/High/Custom).

“Custom” can set the status of Speed, Quality and Resolution to user wants.

Resolution

There are total 3 setup conditions. (CIF/HALF/D1)

Resolution value set here is applied to user’s recording, Event recording.

- CIF : 360x240 @ NTSC, 360x288 @ PAL
- HALF : 720x240 @ NTSC, 720x288 @ PAL (HALF D1 image)
- D1 : 720x480 @ NTSC, 720x576@ PAL (FULL D1 image)

Special Time Recording

This menu is used when it differ recording condition with setup specific time zone. Namely, if it sets specific time zone to Weekday Day, it can record differently according to 2 setup conditions. Specific time zone sets from ‘System’ menu.

There are total 5 setup conditions; No Rec./Low/Standard/High/Same as above (“Recording apply same value set from Speed/Quality”)

Event Recording

It sets “On/Off” using left/right button or mouse after pressing [ENTER].

Detailed Event recording condition sets from “Event Recording” menu.

According to Event recording setup, it can set here whether it records based on Event recording

setup.

6.6 Event Recording

This menu can set recording by event when Event occurs.

Event recording can record by ‘Sensor’, ‘Motion Detection’ and ‘Text’. To do Event recording must set All or Setup by Channel from ‘Schedule Recording’ in advance.

After setup recondition condition, it must set “Event Recording” menu from “Schedule Recording” to “On” for Event Recording setup of product. Also, it must set “Event Source” before Event Recording.

6.6.1 Event Source Setup

For Event Recording, it looks into the method of Sensor, Motion Detection and Text setup.

6.6.1.1 Sensor Setup

This menu is to set Action & Type of sensor input.

It supports 2 types of Sensor, Normal Open (N.O.) & Normal Close (N.C.).

Configure it according to the sensor type what the user uses.

All

This is to select all sensors identically among Off/N.O./N.C.

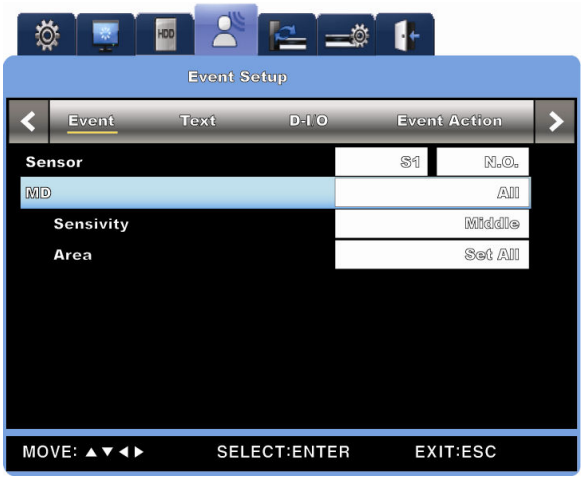
Configuration

It can set 9 sensors (S1~S9) separately.

6.6.1.2 Motion Detection Setup

This menu is for the configuration of event storage which was detected by motion detection

of each channel.

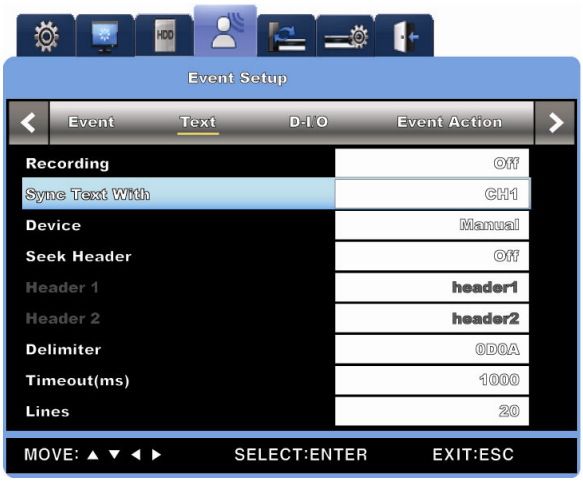


Motion Detection

It sets 12 different sensitivities; low, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, High

6.6.1.3 Text Setup

This menu is for configuring input text information and user set "Event Configuration" value in OSD menu by Text.



Recording

It can On/Off recording of Text input.

6.6.2 All Event Record Setup

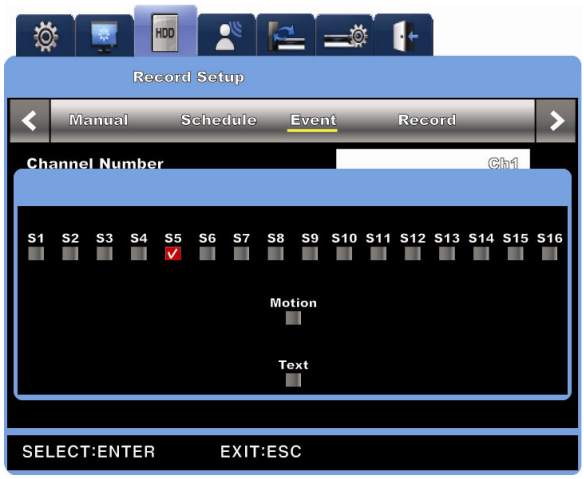
This is setup all analog channels in identical condition.

Sensor/MD/Text

It sets whether it synchronize with Sensor/MD/Text event.

Pairing means synchronizing 1:1 between channel and Sensor/MD.

6.6.2.1 Setup by Channel



Event Source

- Through Event Source can select 9 Sensors, 1 MD and a Text input.
- Selecting Sensor selects box of relevant number.
- Selecting MD, Text selects box when it needs to use.

Macro

There are total 5 setup conditions. (No Rec/Low/Standard/High/Custom).

In the condition except “Custom”, “Speed (fps)” and “Quality” are synchronized automatically.

Pre Event (sec)

It can set max. 5 seconds.

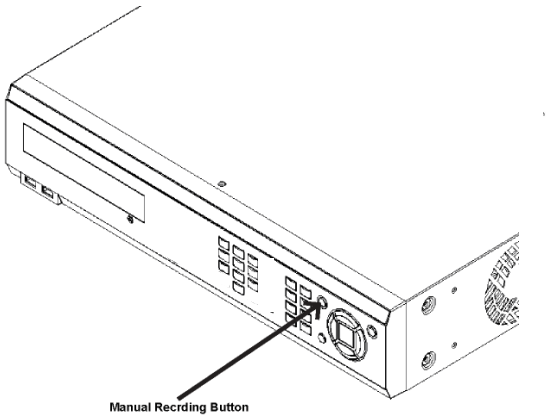
Post Event (sec)

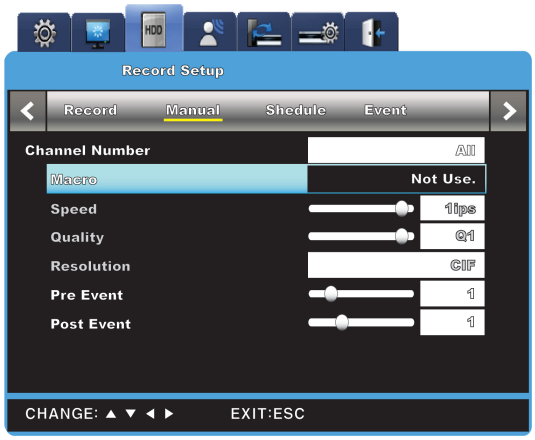
It can set max. 60 seconds.

6.6.3 Manual Recording Setup

When user presses [REC] button at front part, this menu can setup recording condition of image. If manual recording starts, existing recording setup set is ignored and it records image in the value set from Recording Setup>> ‘Manual’.

It records to the value (sec) set in ‘Pre Event’ & ‘Post Event’ of ‘Manual’ menu. Pre Event means the time records before user press [Rec] button, and Post Event means the time record after user press [Rec] button.





Recording Camera Num

It can select recording channels with relevant setup, and all & each channel selection are possible.

Recording Speed/Quality

There are total 5 setup conditions. (No Rec/Low/Standard/High/Custom). In the condition except “Custom”, “Speed (fps)” and “Quality” are synchronized automatically.

Pre Event (sec)

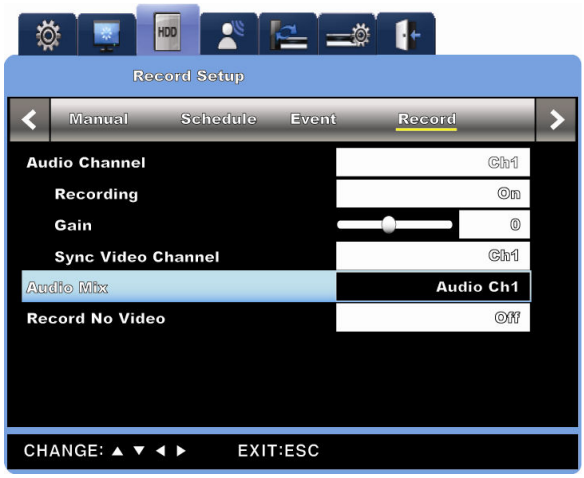
It means the time records before user press [REC] button. It can set max. 5 seconds.

Post Event (sec)

It means the time record after user press [Rec] button. It can set max. 60 seconds.

6.7 Audio & Other Setup (Audio Recording)

Through this menu can set recording of Audio setup & No Video.



6.7.1 Audio Setup

It can set Audio channel, Recording, Gain, and Sync.

Audio Channel

Select channel wants to use Audio.

Recording

It sets whether it records audio using. In case of Off set, audio outputs to live image only and Playback also when it sets to On.

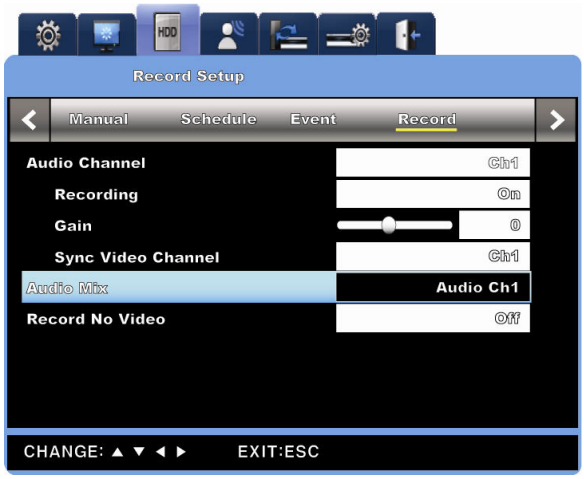
Gain

When Audio sounds too low, it sets Gain to + direction and sets to – direction when audio is too loud.

Sync Video Channel

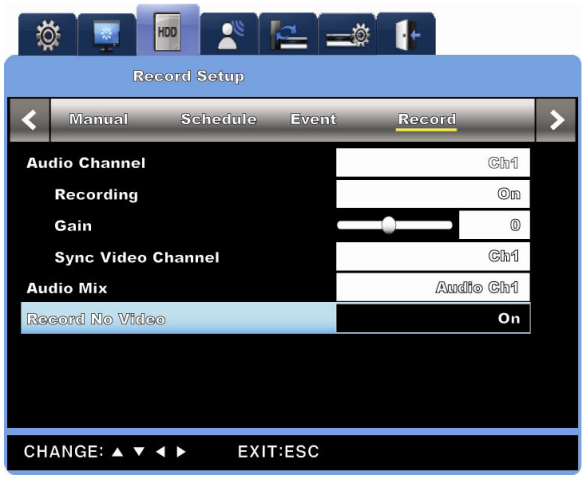
It sets whether it can output audio input when which channel selects. But this function is applied only when recording. Audio output at Live image explains at Audio Mix. If it sets 1CH audio to sync with 5CH, then 1CH audio input is out when 5CH is selected. Default is 1CH audio in and 1Ch out.

6.7.2 Audio Mix



Select Audio to use from Live image. In case of All setup, all input audio is out in mixed. And when selecting specific audio, it is out bony selected channel unconditionally whatever any channel is selected.

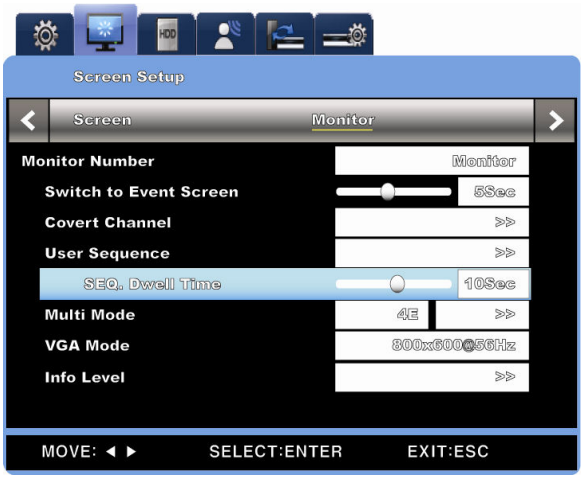
6.7.3 Record No Video



It sets whether it records the input image that has fault or the channel delete image intentionally or not. When it sets to On, it records the channel that video does not input also, and it does not record the channel video is not input when it sets to Off.

6.8 Monitor Setup

It sets relevant item in case of image indication on Monitor.



Monitor & Spot Monitor

The entire function of DVR is available for monitor and spot monitor can use single channel monitor and event pop up.

Switch to Event Screen (sec)

In case of Event, it sets to Pop-up relevant screen automatically. Pop-up duration can set from 2~10 seconds and select among Keep. If it sets to “Keep”, it keeps Pop-up screen. At this time, press any channel button to cancel Keep mode.

If 1CH pops up and 2CH pops up also within pop-up holding time, screen changes to 4 divisions and show 1 & 2CH. And Hold time is extended automatically by starting from last pop-up time.

Covert Channel

It can hide channel in live mode through Covert (Hiding Screen) menu.

If enters to Covert menu, all channel list of product is shown and check the channel through pressing [Enter] button or mouse click. Checked channel does not show images from the time set at Live/Playback.

Auto User Sequence

It can edit auto Sequence function of User Sequence mode. It can set 16 types of Sequence mode and Sequence Time is able to set 1~60 seconds.

Multi Screen Definition

It defines 4E (4 channels), 9DIV (9 channels) channels of Multi Screen in advance.

The method of Multi Mode is through [Enter] button after selecting Mode and right window of

mode, or it can select the channel through [Enter] button or mouse wheel after window open and the channel select using mouse wheel.

VGA Mode

It can select among 3 resolutions of VGA output, 800 x 600, 1024 x 768 and 1280 x 1024.

Info Level

Display information configures what kind of information will be shown to live image and playback image.

In case of live image, user can set view configuration such as time, channel, event, recording status, HDD, remote control ID, and text etc.

In case of playback image, configure time, commend, channel name, event, and text.

6.9 Event Setup

Event Setup includes 7 setups like Event, Text, D-I/O, Event Action, Preset, and System Event.

6.9.1 Event

Sensor

It can set 9 sensors. In case of All setup, all channels are set to N.O, N.C identically. And it can select each channel and set to N.O, N.C, Off differently.

MD

MD detects movement by each channel or all channels, and use to inform MD to user.

- Channel

It can set channel to All or 1~9CH.

- Sensitivity

In case of Sensitivity, it can set sensitivity per each channel Off, Lowest, Low, Middle, High, and Highest.

- Area

Area sets detecting area when MD set.

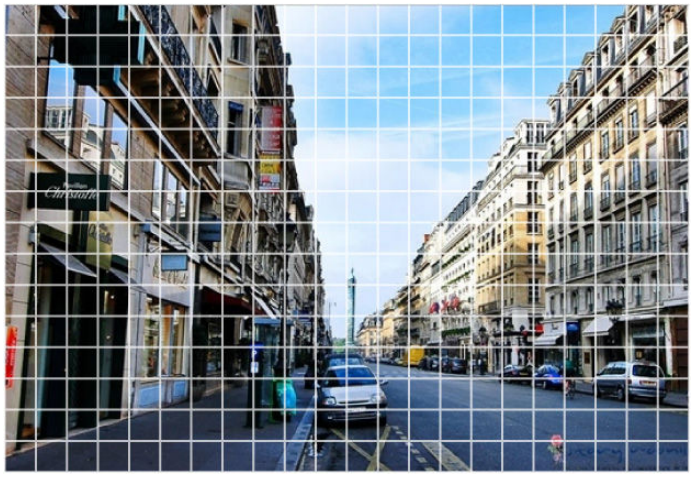
In case of All set, it can select Set All, Clear All. In case of setup by each channel, it can set to Set All, Clear All, and Select Area.

- Select Area

Select Area is available setup when it sets by channel, and it sets detecting parts of movement stressed.

It sets movement detection area of user. There is **NTSC in 22x15pcs, PAL in 22x18pcs partitions** and it can set the area move than 1 piece.

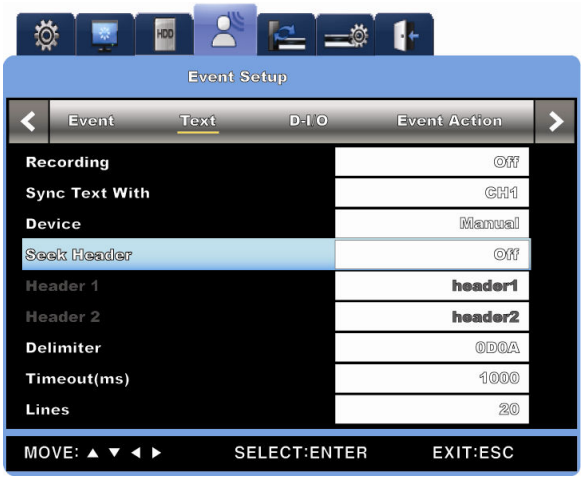
First setup value comes to “Select All”. If it presses “Select Area”, MD area setup window appears.



User can setup MD area directly to screen.

Setup window appears that is divided **NTSC into 22x15 partitions and PAL into 22x18 partitions.** It indicates MD setup area in grey color. To select Setup area press “Enter” or mouse click after selecting the area wants through direction key. After setup is completed, press “ESC” or right mouse click to return previous menu.

6.9.2 Text



Recording

It can On/Off recording in regard to Text input.

Sync Text With

It selects Text data and synchronization channel.

Seek Header

Various data types come from external device (Access Control, POS, and ATM etc). Like Star Finger 007, it does not need protocol that is registered already. If not, it requires parameter to grasp the structure of the data from Text data input continuously.

Namely, all data has the start and the end. Header means the data is inserted always to inform the start. Hence DVR discover the character defined to Header's data, and it can find out the start of a data. And the reason of setup 2 Header is to detect these because a device can send various information externally.

Delimiter

Because Delimiter's value can be different with each device wants, refer to relevant manual or contact seller and then input the value.

Time Out (ms)

The number of line defined below means the text line number that is maximum usable line of a line. In case of regulated data, there can be long or short information. For example, it has 3 lines to assign customer's name from ATM, and some register First Name & Last Name only. These need a line less than others.

But because DVR cannot detect this automatically, it is considered to last line after some time from registered time of last line, and it decides whether it records a registered data as complete

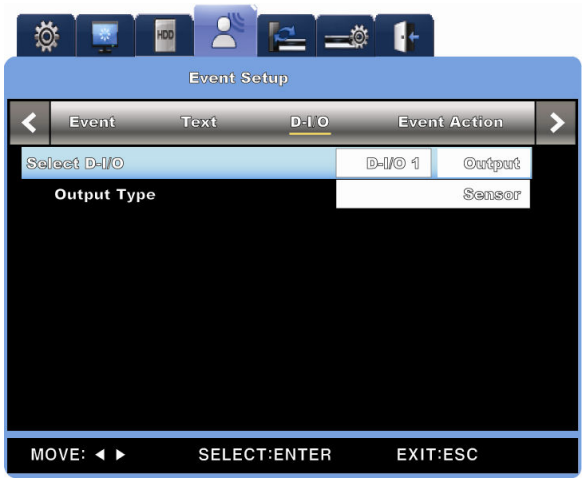
data.

Lines

It defines a data consists of how many line.

In case of External device, it must consult with seller before installation because it may be not recognized according to feature.

6.9.3 D-I/O



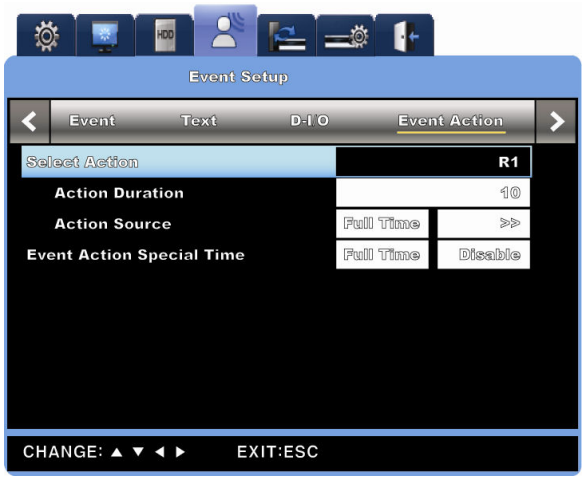
D-I/O is Port able to use digital Input & Output simultaneously. It has 12 Digital Input & Output.

D-I/O Channel & Input/Output

It can set 12channels to Input/Output. When Input sets, it starts Emergency Recording if the signal in from any one of channel. When Output set, it works if Sensor input.

For urgent recording, please, select one between 1 and 12 of D-I/O in Digital I/O configuration by [input] and set input type to [Urgent] and then make its D-I/O on. At the same time, recording macro uses the macro set in Event Recording. Its Recording time is same as the value set in [Recording after Event].

6.9.4 Event Action



Event Action sets workable Action according to Event Input.

Select Action

Select Action can select R1~4, Buzzer, E-Mail.

Action Duration

Action Duration operates when Relay works and keeps as long as the time set, and also Buzzer keeps in same way. It works E-Mail Sending in an interval of time set.

Action Source

Action Source can setup Sensor, Motion, and Text separately. Also, all event input can setup simultaneously.

- E-Mail Address

E-Mail Address sets when Select Action is used to E-Mail.

E-Mail Address input E-Mail Address of receiver for message.

Input is in type of xxxx@xxxxxx.xxx.

But, English and figure are only available.

- Sender Address

Sender Address set when Select Action is used to E-Mail and input is set like xxxx@xxxxxx.xxx.

The user does not have to specific mail address and input a checkable mailing address to check if it is sent to specific DVR.

Event Action in Special Time

It sets whether it operates Event Action in Special Time or not.

6.9.5 Network

When DVR connects to network, this is menu to setup relevant network data.

Type

It sets up network line type (Ethernet/xDSL) connects to DVR. When it is connected Exclusive line or cable model or LAN of DVR, it sets to 'Ethernet'.

When DVR is connected to xDSL in PPPoE method, it sets to 'xDSL'. But even if xDSL line, it sets to 'Ethernet' when it is not PPPoE method.

DHCP

DHCP (Dynamic Host Configuration Protocol) is to control host address on the network. Using such protocol, all Host connected to LAN can share authorized IP address that its number has limited when internet connects. Namely, all Host connects to LAN is assigned authorized IP address from DHCP server temporary. If LAN has DHCP server and activates DHCP menu, DHCP server assigns authorized IP address to DVR.

'DHCP' is used in LAN condition that DHCP server operates. Generally, it operates DHCP by LAN in case of middle or large size, and small size uses NAT (Network Address Translation) function of HUB.

IP Addr

IP Address is used when communicating DVR & CMS and is used to connect from Webviewer to DVR. But it is available when Net Mask and Gateway are set.

Net Mask

Net Mask assigns the range able to input IP Address and same range of IP make possible to communicate. Net Mask receives from network administrator and use.

Gateway

Gateway must input so that IP Address communicate, and it receives from network administrator and input.

DNS1

DNS1 must be input when it registers DVR to SWR and use
DNS Address requests to network user and input.

Additional DNS

Additional DNS input to replace when DNS1 is unstable or has the trouble.

Port

Port is used when it register to SWR or connect through CMS or Webviewer

The basic port is 4000. Watch out of port input when you use PPPoE modem and IP sharing device.

Band Width Limit (Mbps)

Maximum transmission speed to output data from DVR, namely, it sets capability for transmitting data. It has no problem to use without additional setup and it recommends administrator sets

6.9.6 xDSL

In case when DVR is connected to xDSL line and use PPPoE, it must set user ID & Password. ID & Password uses the data given when join to xDSL.

User ID/Password

If DVR is connected to xDSL, it must set ID & Password.

Status

It indicates the condition of DVR connection.

6.9.7 DDNS

It DVR is connected to cable model or xDSL modem, IP address is changed whenever it tries to connect to ISP. In this case, user cannot find IP address changed. If DVR that uses fixed IP is registered to DDNS, it can find IP address changed easily when it is connecting to DVR.

In order to register dynamic IP address in DDNS, please, refer to the below explanation.

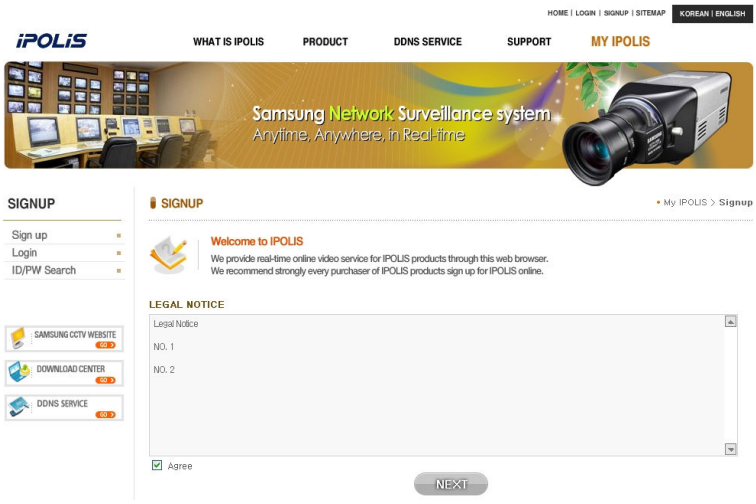
DDNS Registration

DDNS Registration procedure

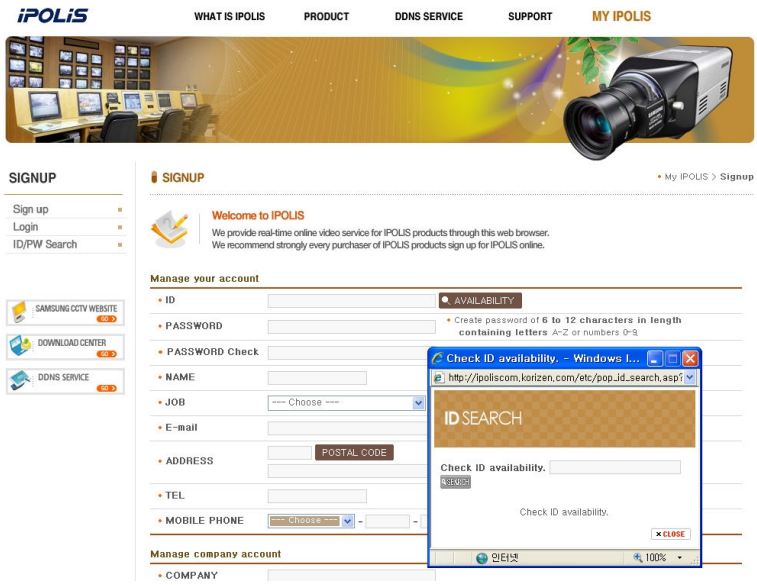
1) Sign up at iPOLiS website.

- The website is [www.samsungipolis.com]

- Agreement the general terms and conditions

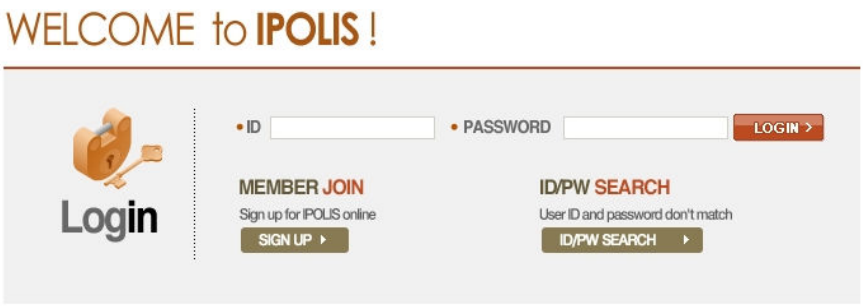


- SIGN UP page: check ID availability

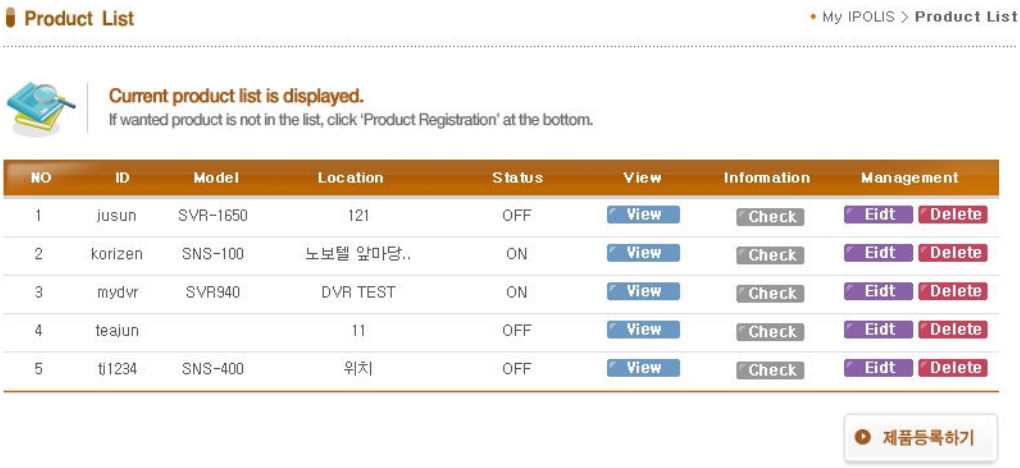


2) The product registration is possible after sign up.

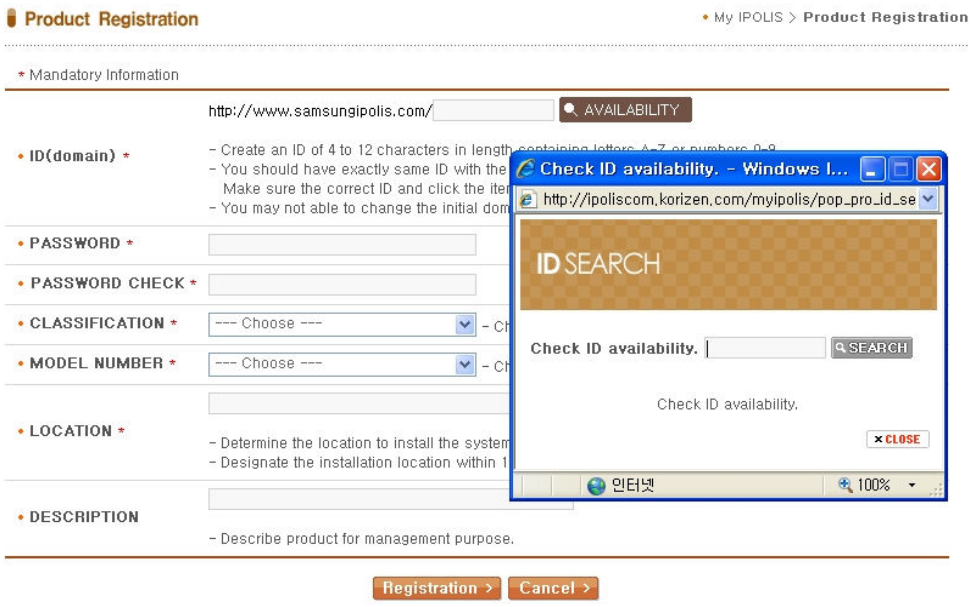
- Sign in at iPOLiS website



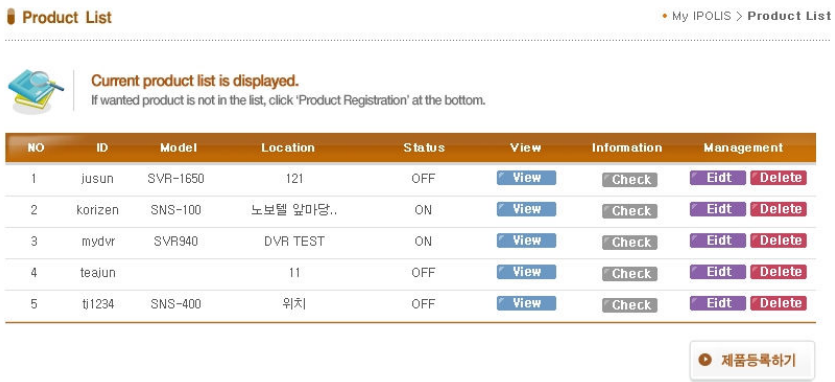
- Product List (If you didn't register products, there are no list)


Product List
My IPOLIS > Product List
Current product list is displayed.
If wanted product is not in the list, click 'Product Registration' at the bottom.
NO ID Model Location Status View Information Management
1 jusun SVR-1650 121 OFF View Check Eidt Delete
2 korizen SNS-100 노보텔 앞마당.. ON View Check Eidt Delete
3 mydvr SVR940 DVR TEST ON View Check Eidt Delete
4 teajun 11 OFF View Check Eidt Delete
5 tj1234 SNS-400 위치 OFF View Check Eidt Delete
제품등록하기

- Product Registration (**Check ID availability**)



- Check the registration at product list


Product List
My IPOLIS > Product List
Current product list is displayed.
If wanted product is not in the list, click 'Product Registration' at the bottom.
NO ID Model Location Status View Information Management
1 jusun SVR-1650 121 OFF View Check Eidt Delete
2 korizen SNS-100 노보텔 앞마당.. ON View Check Eidt Delete
3 mydvr SVR940 DVR TEST ON View Check Eidt Delete
4 teajun 11 OFF View Check Eidt Delete
5 tj1234 SNS-400 위치 OFF View Check Eidt Delete
제품등록하기

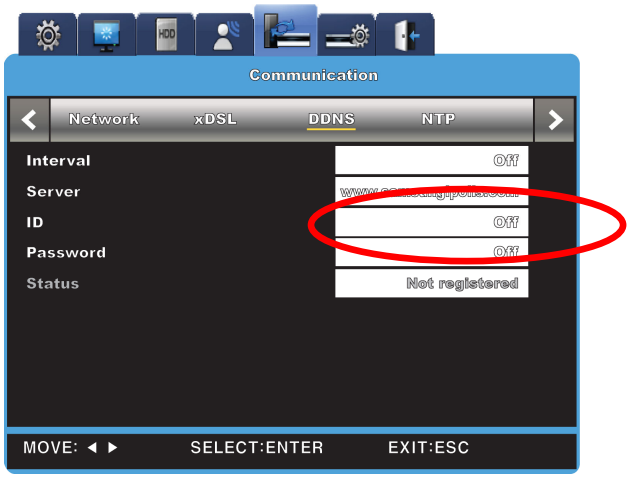
3) Set-up DDNS information.

SVR-1660 can be set up under the network screen in the order as listed in the menu.

If you press the menu button and select the network, you will see the screen as shown in the diagram below.

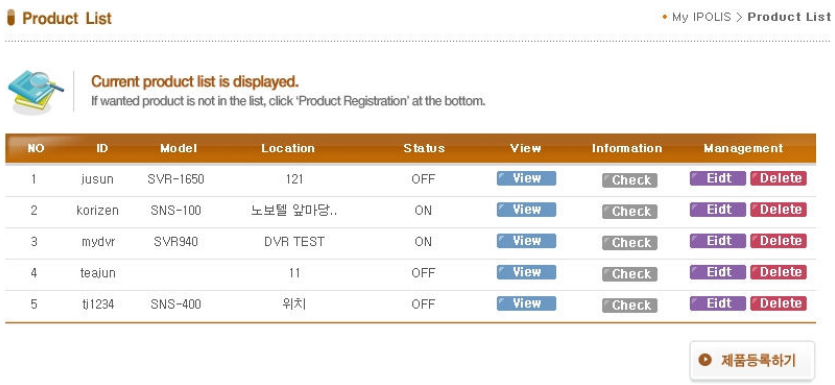
In the below screen, select DDNS as “yes,” and in the ‘DDNS SERVER DOMAIN NAME’ enter DDNS server address. (Default: www.samsungipolis.com)

ID and PW are the same as that created when you registered the product on the iPOLiS homepage. Please enter the domain ID and PW.



When this process is finished, the DVR frame section has now completed DDNS set up.

3) The connection status of selected product can check on product list.

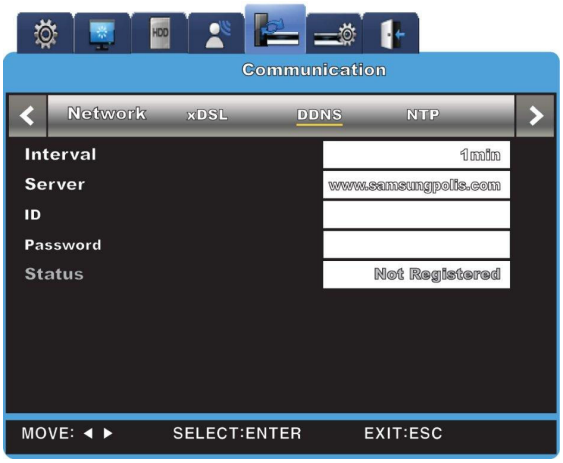

Product List
My IPOLIS > Product List
Current product list is displayed.
If wanted product is not in the list, click 'Product Registration' at the bottom.
NO ID Model Location Status View Information Management
1 jusun SVR-1650 121 OFF View Check Eidt Delete
2 korizen SNS-100 노보텔 앞마당.. ON View Check Eidt Delete
3 mydvr SVR940 DVR TEST ON View Check Eidt Delete
4 teajun 11 OFF View Check Eidt Delete
5 ti1234 SNS-400 위치 OFF View Check Eidt Delete
제품등록하기

[VIEW]: See the log-in page of selected product

[Edit]/ [Delete]: Edit/Delete the selected product, password is needed for checking

The product ‘ID (domain)’ can not change at registered status.
When the product needs to change the ID, first of all, delete the desired product, and register product again.

To register fixed IP to DDNS refer to following explanation for setup.



Interval

For the continuous registry, it sets register period from 'WRS Interval'. According to setup value, fixed IP address renews its data to DDNS server regularly. If user sets register period to '0' or it does not transmit any data of DVR for 2 days, its data is deleted from DDNS.

Server

This menu sets server address to register. WRS address is 222.121.60.188.

ID

Input ID registered when joins to DDNS server.

Password

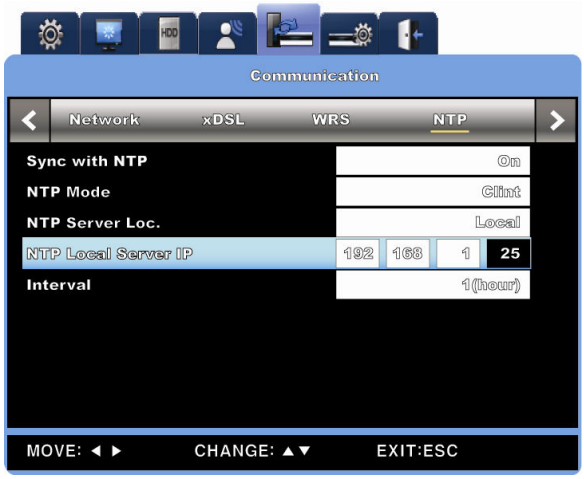
Input Password registered when joins to DDNS server.

Status

It indicates registry status of DVR. 'Not Registered' indicates unregister, and it indicates registry if it indicates Date/Time & OK.

6.9.8 NTP

NTP(Network Time Protocol) is synchronizing the time between devices connected to network. It consists of that Server provides standard time on network and synchronizing Client by connecting to this server and receiving the time.



Sync With NTP

It cans NTP function On/Off.

NTP Mode

It sets whether it operates NTP mode of DVR to Client, Server or Both.

NTP Server Loc.

When NTP Mode is set to Client, it is enabling. It sets whether NTP server is on Local Network or internet (Public).

NTP Local Server IP

When it sets NTP Server Loc. to Local, it is Enabling and sets IP in server. Input IP of DVR that sets IP in NTP server or NTP Mode to Server at local network.

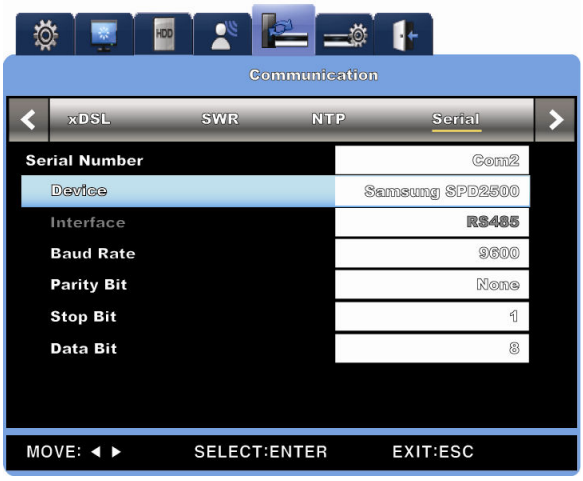
Interval (min)

Set the period of time to synchronize.

When NTP Mode is Client, Sync with NTP must be set to On.

6.9.9 Serial

DVR is usable total 4 Serial port, 2 RS-232C and 2 RS-485 ports.



Serial port

Select the port to control by connecting with the unit

Device

Set external device connected.

Interface

This menu is to setup using which interface.

It fixed COM1, COM3 to RS-232C, and COM2 to RS-422/485, COM4 to RS-485.

Baud rate/Parity/Stop (bit)/Data (bit)

Configure the value same as the set value of external unit.

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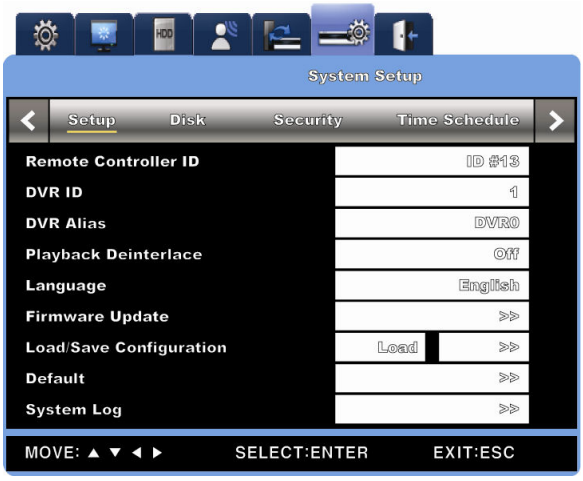
6.10 System Setup

6.10.1 Setup



Remote Controller ID

Max. 16 remote controllers ID are selectable, and it can control max. 16 DVR

It can register Remote controller as following order.

- Direct Remote controller to DVR.
- Press ID button that suits to Remote Control ID set.
- If Remote controller ID is identical to DVR ID, DVR buzzers.
- After tune ID, Remote controller is available to use.

DVR ID

This menu is to set relevant keyboard address when it operates all functions of DVR through keyboard button. First set value is set to “1”. If it connects several DVR to 1 keyboard and use, it can collide with other channel. At this time, it sets keyboard address to other value.

DVR Alias

This menu is to set DVR name.

Playback Deinterlace

It is On/Off Playback Deinterlace.

It works when Recording resolution sets to Full D1. When it sets to On, screen shaking is less in Pause of Full D1 image.

Language

It supports multilingual for OSD menu. Select the language wants.

Firmware Update

Save update firmware in USB and connect it to DVR

Select firmware update item in the system menu and press ENTER

When there is question to update or not, peas Y and ENTER. The device reboot with buzzer sound.

The firmware for USB update is formed in “*.dat” file.

Firmware update via network is perform update file and select the DVR to update and click on it. When there is IP and MAC address, port for the selected DVR, type the password “(default:11111111) at Admin’s Password” SNM-128S and press “Starting upgrade”

Rebooting message pops up after upgrade and press “Y”

Load Configuration

It sets DVR setup value stored in USB memory by transmitting to DVR.

Save Configuration

Save preset setup status of DVR to USB device.

Default

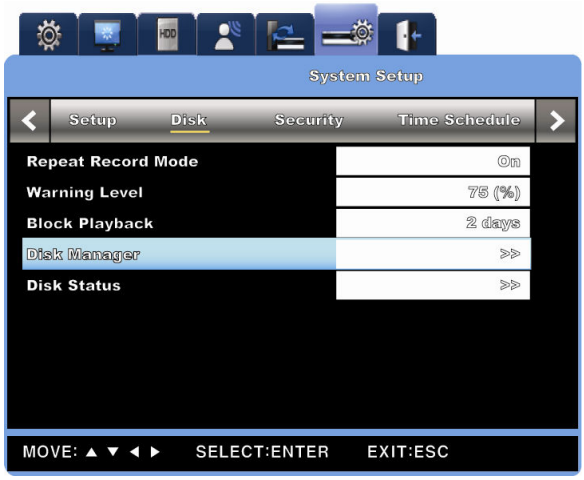
It used when it sets existing set value to first factory value to ship. To create first value press “Default”.

System Log

It can check the condition of setup change of system or HDD status, HDD condition, Power condition, System alarm etc happen.

6.10.2 Disk Setup

Next explains the method how internal, external HDD add or delete or format.



Repair Record Mode

When no recording space in HDD, it deletes from first recorded data automatically.

Warning Level

It checks all disk size used that is connected or attached to DVR and inform if it records until the capacity setup.

Block Playback

This menu is to make visible limitedly the recorded image in HDD as much as the date set. If it records for 30days and sets Block Playback to 2days, it can play the day before including

30days among 30days. It can set from 1day till 31days.

Disk Manager

Disk Manager is to manage internal or external HDD using.

It manages the state indication of HDD, Bad Block, Size, Add, Remove etc.

Disk Status

It can view HDD temperature, state of HDD installed in System.

Type : It indicates location of disk.
Int A (Internal A HDD), Int B (Internal B HDD), Ext (External HDD)

Model : It show model name of HDD

Bad Block : It indicates Bad Block HDD. When no problem, it indicate 0. In case when HDD is not Enabling, it does not indicate Bad Block.

Size(MB) : It indicates HDD size into MB unit.

Enabled : It changes the state of HDD to Use or disuse.
Yes: Use / No: Disuse

In case of the change to HDD YES

- If press [Enter] or roll mouse wheel at Enabled No condition, NOTICE window pops up and shows next message.
- "This disk can be added without format. Nevertheless, do you want format this disk?"
- If select **Yes**, it maintains previous data as it is and Enable to use HDD.
- If select **No,** it deletes previous data and Enable to use HDD.

In case of the change of HDD No

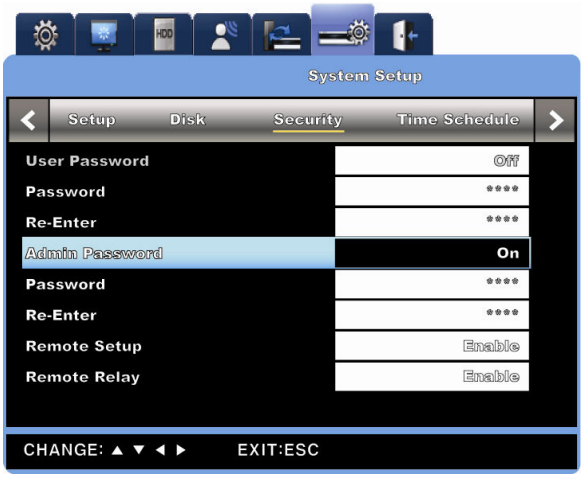
- It pops up NOTICE window and shows next message using [Enter] button or rolling mouse wheel at the condition of Enabled Yes.
- “Disk will be removed”
- If select Yes, “Recording disk removed” is appeared and changed to Enabled No.
- HDD is not used.
- If select No at “Disk will be removed”, it keeps previous HDD state as it is.

6.10.3 Security

It limits the range able to use by classifying DVR user to Admin & User.

In case of Admin, they can use all functions of DVR including Setup & Change.

In case of, they cannot access to Setup menu but only Playback.



User Password

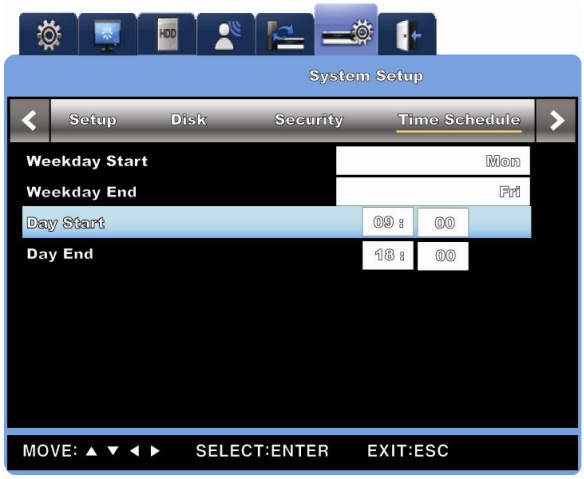
If user’s authority is allowed, they are allowed only Monitoring and Playback. Default value set to “1111”.

Admin Password

If administrator’s authority is allowed, all functions are available and default value set to “9999”

6.10.4 Time Schedule

It sets the date & time period defined to Weekday Day& Night, Weekend Day & Night.



Weekday Start/End

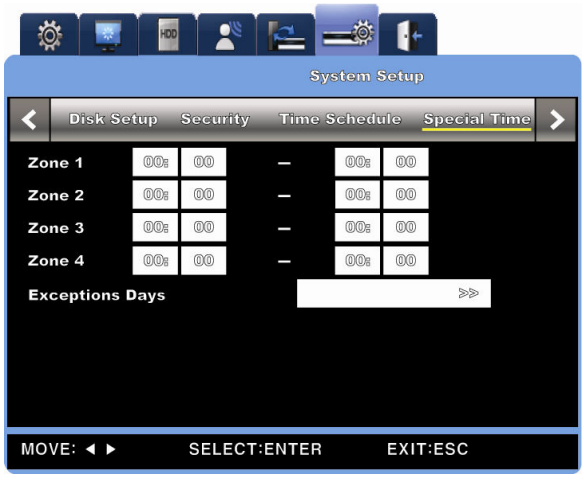
Among Monday to Sunday, it sets Weekday time period. The other part unset is under Weekend time period.

Day Start/End

It sets Day time period using up/down direction key. Unset parts means Night time period.

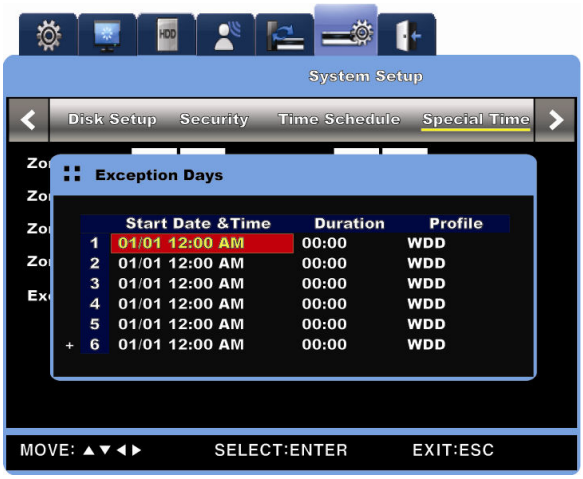
6.10.5 Special Time

Special Time is able to four setups. It can set another specific time period in each time zone (Weekday (Day), Weekday (Night), Weekend (Day), Weekend (Night)). For example, it can apply various conditions like setup Lunch time or Conference time separately.



Use when it sets regular exceptional time.

Exception Days



Use when it sets of irregular exceptional time. It can set max. 30 irregular exceptional times and set Start Time, Duration, Profile.

Start Date & Time : It indicates stat date & time of exceptional zone.

Duration : It sets time apply Profile from exceptional time set.

Profile : Profile is to set simultaneous recording with Schedule setup of Schedule Recording, and it can set to No Rec, WDD, WDN, WED, WEN.

No Rec : No Recording

WDD : Recording to Weekday Day setup

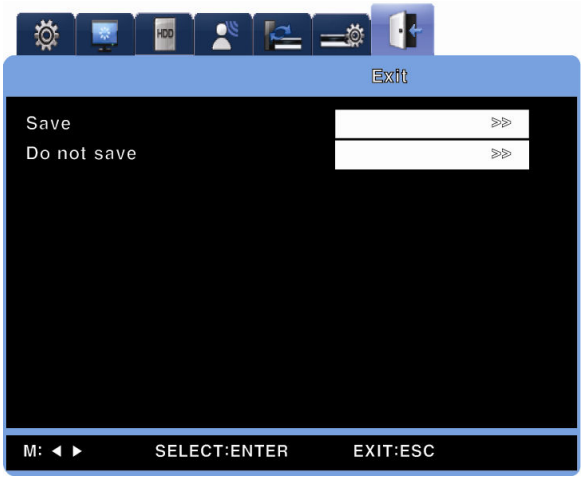
WDN : Recording to Weekday Night setup

WED : Recording to Weekend Day setup

WEN : Recording to Weekend Night setup

6.11 Exit

Exit menu is to exit without recording or recording Menu setup.



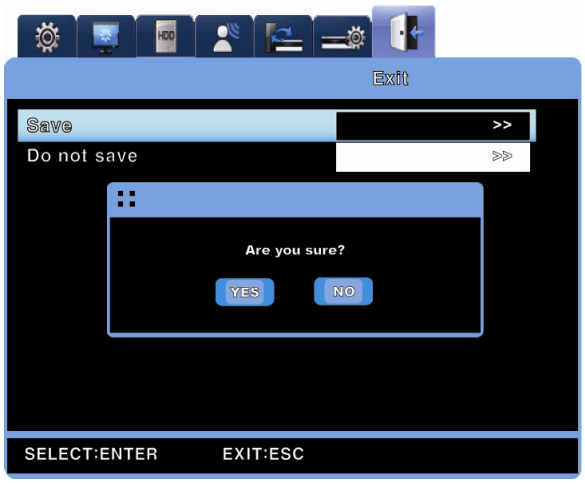
Save

This is menu to save the state of setup at other menu and exit to live screen, it can select into Set or No Set.

Select “Yes” when it saves the setting and exit, or select “No” when it does not save setting and exit.

Do not Save

This menu is to exit without saving the status of setting at other setup.



Chapter 7. Web Viewer

WebViewer is web program loaded into product that can view image recorded or monitoring image of product in real-time through web browser in PC remotely able to use Internet..

Structure of Web Viewer is divided into Monitor which can monitor image in real-time with Login page, and Playback which can playback recorded image.

7.1 LOGIN

If user inputs IP address and Port on browser address box,
User can access to Webviewer Login page for example type "http://192.168.1.100:4000.
If default value of the port is not 4000 but another value, input the changed port value in port input box.
It can connect to WebViewer Login page if it input IP address set to product in Web browser window.

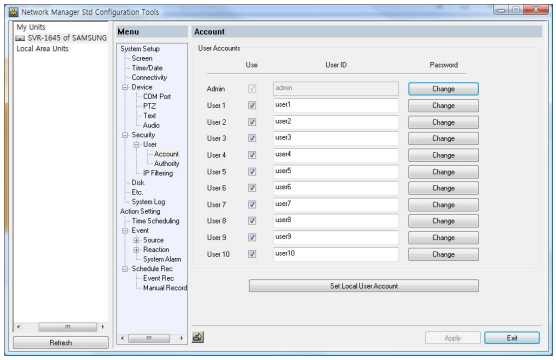
Enter user ID & Password set in SNM-128S and click 'Login' button and can access. In case of no change of password in SNM-128S, factory default ID is admin and Password is [11111111](8 digit). But, ID cannot be changeable.

Reference

If user wants to change administrator password or create new user ID & Password, please, refer to the section '7.2 access user configuration'.

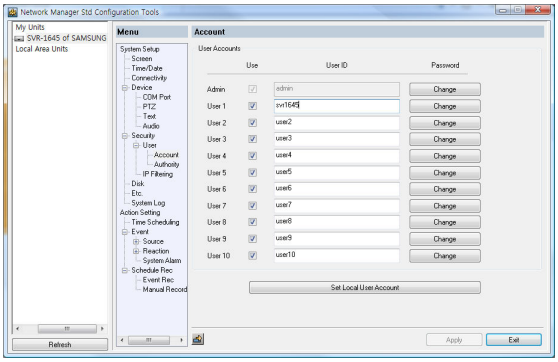
7.2 Connection User setup

It must input user ID & Password set into Configuration Tool program to log in WebViewer.

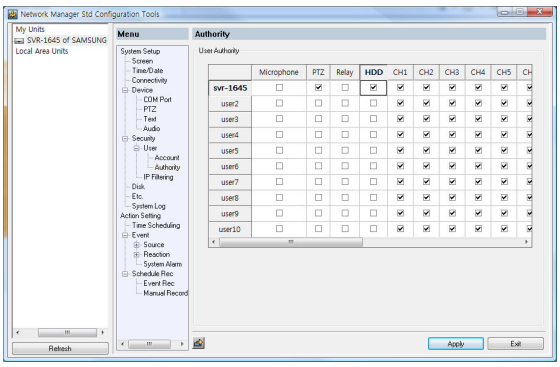


It can use ID & Password of an administrator and 10 general users.

It is able to change administrator and user's ID for security. Cancel by check 'Use' of user's account disusing.



It is the state changed user's ID & Password at Configuration Tool.

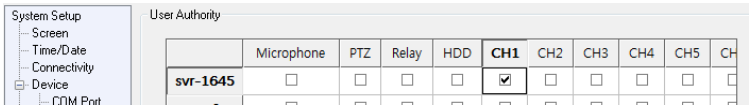


After the end of account setting, set authority of user' ID.

Check ‘Hard’ in user account at authority setup of Configuration Tool to use Playback page.

Also, it checks Check box and apply so that user ID who sets like ‘Microphone’, ‘PTZ’, ‘Relay’ can use.

When it shows 1CH image only, check the rest channel and uncheck the rest channels & functions.



7.3 Usable Browser

WebViewer is optimized to Windows Internet Explorer 6.0 or higher. For smooth use, Windows Internet Explorer 6.0 or higher is installed in PC using.

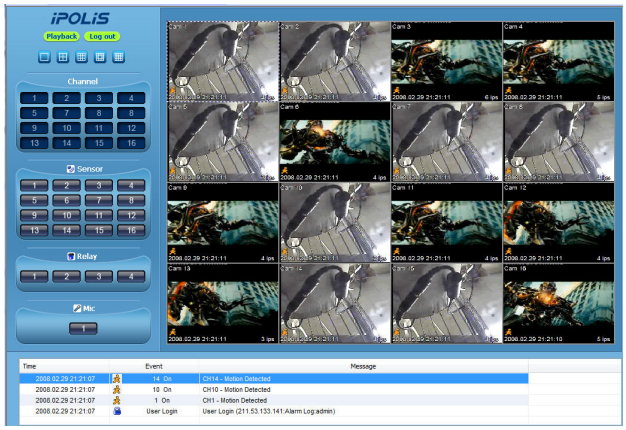
Webviewer Installer

It provides auto installation program to use the function of WebViewer at login page.

It installs ActiveX which is able to use WebViewer function through PC connects at first to WebViewer.

When install WebViewer Installer, it must close all programs relate to SNM. Installation may not smooth.

7.4 Monitor



Input User ID와 Password at Login page, and move to Monitor page if it is authorized normally. At Monitor page, it can monitor real-time camera image connected to product or use PTZ camera control, Relay and microphone function connected according to user authority.

Let's study introduction and functions about each part term of Monitor page.

7.4.1 Screen division & Image location change

It shows to 9 divisions, 16 divisions, or 32 divisions according to channel number of product when connect to Monitor page.

It can change to 1, 4, 9 ,13, 16 divisions by click number of upper page.
Also it can switch to 1 screen mode by click screen part.

Among Playback image, double click after load mouse to the channel going to convert to any 1 channel temporary.

Switch to 1 screen, and double click screen again to return to previous division screen.

It can change image location at division screen.

To move CH3 image to Ch6 image location drag & drop Ch3 image to CH6 location to change location using mouse.

7.4.2 Moving Playback

If it clicks following picture in top page, it moves to Playback page.

7.4.3 Channel On/Off

Channel On/Off button is located on left page. It can On or Off by click the channel wants, and default is On.

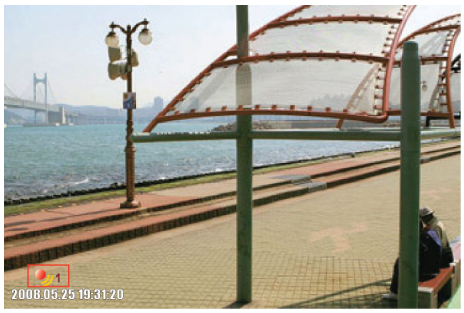
Above picture is Off state about 9~16CH. When Channel is Off, it changes to grey color and image is not visible and is changed to black.

Inactivated channel button is the case that it does not support at relevant product.

7.4.4 Sensor indication

This is icon indicates sensor activated of product.

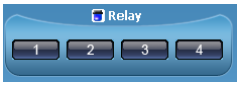
If sensor activates, relevant sensor is changed to Red and sensor number is indicated on the image. It maintains in Blue when sensor inactivates.



Inactivated sensor icon is the case that it does not support at relevant product.

7.4.5 Relay operation

It can Relay On or Off of product. If it clicks the number of button, Relay is On and icon change from Blue to Orange color.



Inactivated sensor icon is the case that it does not support at relevant product.

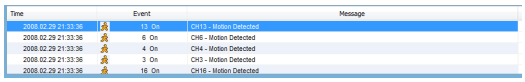
Reply work needs user's authority. Refer to user guide in Product for User Authority Setup.

7.4.6 Microphone use

It can microphone On or Off and Default is Off. In case of click button, projecting button changes to Blue and microphone is available.

Inactivated Mic button is the case that it does not support at relevant product.

7.4.7 Event Data



It shows Event data happens in real-time at bottom of monitoring page.

Indicated lists to Event data are as follows.

(Table. Event Icon)

Button	Function
	Motion Detect On
,	Sensor Input
,	Relay Output On
,	No Video, Video Detected
	Text Input
	User Login

7.4.8 Image Recording & Image Storage

7.4.8.1 Image Recording

After selecting channel wants to recording from image monitoring, it selects “Rec Start” pressing right mouse button. It can record image max. 10 minutes. It indicates recording time on the image executing Quick Recording.

Among image recording, if it closes recording by click “Rec Stop” of right mouse again and open dialog box to record file recording, user saves to temporary directory with naming to the file.

Recorded file is saved to “*.re4” file, and re4 file is able to playback through CMS Playback program Mini Player program.

7.4.8.2 Save Image

Image recording can be saved into 3 types of jpg, bmp, eye, and Saving means the function to save image of channel monitoring at present into 1 Frame.
Select the channel to save image and click right mouse. Select “Save As” among right mouse menu and appoint saving location and save by pressing Save button. It can check by opening directory saved and double click the saved image to check saved image.

7.4.9 PTZ Use

Among the image monitoring, it can cancel PTZ if it selects the channel set PTZ and press right mouse button. PTZ Control can use Pan/Tilt, Zoom/Focus functions.

Pan, Tilt Control

Click right mouse at the image wants to control PTZ and select “PTZ” menu. It shows cross line at center of image and Pan, Tilt works when mouse click the image. If click left/right direction from the center, PAN controls, and Tilt controls by click to up/down direction. Far from the center,

Pan/Tilt works faster.

Zoom, Focus Control

If it move mouse to left, right edges, it shows slide bar for Zoom, Focus. A unit that is possible to Area Zoom has Zoom Zero work button. Using left side slide bar of image can Zoom In/Out, and left side slide bar can control Focus.

Preset Move

When Preset is set, it selects Preset works “Go to Preset” pressing right mouse button at PTZ control condition. It moves to preset position selected. User should set Preset in advance.

Auxiliary operation

When Preset is set, Auxiliary” at Pop-up menu is indicated additionally. And it executes relevant action if it selects relevant menu registered.

Refer to ‘PTZ Setup’ for PTZ setup method & PTZ camera list available.

7.4.10 Audio Use

When synchronized audio and channel is set, it can execute audio listening by click “Listen” menu of pop-up menu that comes through right mouse click on the image. And audio listening is possible through Uncheck of Mute.

7.4.11 Image Channel Close

It can cancel connection of image monitoring by click left side channel button of image. And Screen comes to black.

To reconnect the channel disconnected clicks channel button that is turned Off to reconnect relevant channel.

7.5 Playback

This page is to playback the image recorded, and user who has offered 'HDD' authority at administrator account or use account can use this.

Playback consists of 9 division screen can playback using Search through calendar by recording period or Move period button. It can Copy recorded image and Print Pause image or can save to bmp file.

Let's study about introduction & function and naming of each part.

7.5.1 Screen Division & Channel Change

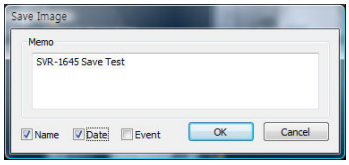
Playback supports 1, 4, 9 division screen. Using the menu as about picture can select division screen.

If user forms to 4 divisions channel and shows CH1~CH4, it can change the channel to see CH5~CH8 using '>>' button click. If press '<<' button, it shows previous channel group, CH1~CH4.

7.5.2 Image Recording

While Playback, it can record to BMP file.

Select channel want to record by mouse and click ‘Save’ button.

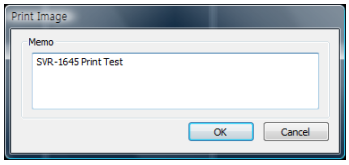


Save Image dialog box comes, and it can select input message, Name, Date, Event data.

Dialog box asks location to save if press ‘OK’, and it opens dialog box and can save to bmp format file.

7.5.3 Print

Select the channel wants to print like Image recording and click ‘Print’ button.



The window for input Memo appears. It can print image through printer connected if press OK.

Print material includes ‘Printing Date’, ‘Channel name’, ‘Recording Date’ ‘Event’, ‘Memo’.

7.5.4 Web Monitor move

It can move to Web monitor page by click ‘Monitor’ button at left top of page.

7.5.5 Channel On/Off

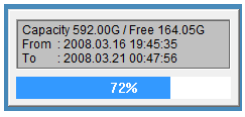
The function is same as channel On/Off at Web Monitor.

It is On/Off button positioned on right side of page, and it can On or Off by click channel wants.

Default value is On condition.

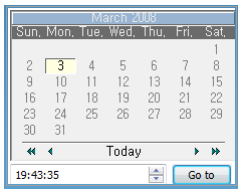
Inactivated Channel button is the case that it does not support at relevant product.

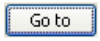
7.5.6 Recording period & Recording size check



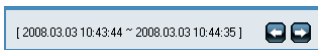
It indicates total size recorded to HDD and free size, and it indicates starting date & last date of recording. Also it shows indication in percentage about HDD capacity.

7.5.7 Calendar Search



Recorded date is activated to Black, and unrecorded date into Grey. If it selects date and time wants to check the image 

recorded and press button, it playback image of relevant date & time.



When press 'Go To' button, it indicates 24hours image recording range from appointed time at left bottom of page. It can change the range through '24h' button click at above picture.

7.5.8 Function button at image below

① It indicates Playback range of image recorded.

② It can change playback time zone back & forth click as time as set at (5).

③ It can '1 frame back', 'Play backward', 'Stop', 'Playback', '1 frame forth' from left button.

④ It is function to set Playback speed. After button click, it can set playback speed relevant to '0.5x, 1x, 2x, 4x, 16x, 32x, 64x, All'.

⑤ It can setup Playback range. After button click, it can select playback range relevant to '10min, 30min, 1hour, 3hour, 6hour, 12hour, 24hour'.

⑥ It can select whether uses DirectX or not. If DirectX mode is checked, it playback good quality image based on graphic card and PC performance because it plays back image through Direct Draw.

⑦ It is function to control audio playback and volume.

Compatible HDD List

Seagate Technology		Western Digital	
Capacity	Model	Capacity	Model
750GB	ST3750840SCE	750GB	WD7500AVCS
500GB	ST3500830SCE	500GB	WD5000AVJS
250GB	ST3250820SCE	250GB	WD2500AVJS

Compatible Media List

DVD-R manufacture	CD-R manufacture
Mitsubishi(Exhortation 16X)	Mitsubishi(Exhortation 16X)
TDK(Exhortation 16X)	TDK(Exhortation 16X)
Imation(Exhortation 16X)	Imation(Exhortation 16X)
Sony(Exhortation 16X)	Sony(Exhortation 16X)

Specification

Mode		Description
Video Input		16 BNC Connectors (NTSC/PAL, Auto detect)
Video Output	Monitor	2 BNC (1 Main Monitor, 1 Spot Monitor), 1 VGA
	Loop Out	16 with Auto-Termination
Video Compression		MPEG4 (JPEG: SNM-128S Only)
Display	Speed	480/400fps (NTSC/PAL)
	Resolution	D1(4CIF), 2CIF(HALF), CIF
	Multi Screen	1, 4, 9,10,16
	Configuration	Brightness, Contrast, Covert Feature
Recording	Speed	480/400fps (NTSC/PAL) at CIF
	Resolution	D1(4CIF), 2CIF(HALF), CIF
	Mode	Emergency, Manual, Event, Schedule
	Recording Quality	5 Levels of Compression Rate / Record Frame Rate Adjustment
	Pre/Post	5sec / 60sec Recording
Search Mode		Time, Calendar, Event, Thumbnail, Text, Smart(Remote Playback Only)
Playback Mode	Speed	Forward, Reverse, Pause, 1/2x, 1x, 2x, 4x, 8x, 16x, 32x,

		64x
	Multi Screen	1, 4, 10,16
Multiplex Function		Simultaneous Live Display/Playback/Record, SNM Monitoring/Playback
Camera Title		22 Characters per Channel
Motion Detection		22x15 (NTSC)/ 22x18 (PAL) grid
Event Notification		Automatic E-mail, Internal Buzzer, Relay-out, Pop-up Screen, Network Event
HDD	Internal	250GB basic(4 SATA HDD install possible)
	External	2 e-SATA(SVS-5E)
Backup		DVD Writer (CD-R 700MB Media, DVD-R 4.7G Media), e-SATA, USB, Network
Sensor Input / Relay Output		16 Input / 4 Output (NO, NC)
D-I/O		Software Controlled 12 IO(D-sub)
Audio		16Ch Input (4 RCA, 12 D-sub) / 1Ch Output
Interface		2 RS485, 2 RS232C
Network	Protocol	TCP/IP, ARP, ICMP, DHCP, PPPoE, UDP, SMTP, SNMP, FTP, SNTP, HTTP
	Software	SNM-128S (Supplied Basically), Web-viewer (Monitor, Search, Playback, Backup, Event Monitor, PTZ)
	Transport Speed	Max.480fps
System Control		Key Buttons, Remote Client, IR Remote(Controllable up to 16 DVRs), Keyboard Controller(Option, SCC-3100A) Password : 2 Level (Admin/User) PTZ Control : RS485/422, RS232C
File System		Intelligent Power Failure Recovery
Watermark		Supported
Operation System		Embedded Linux
Temperature	Operation	+5℃ ~ +40℃
	Storage	-20℃ ~ +60℃
Humidity	Operation	30 ~ 80% RH Below
	Storage	93% RH Below
Dimensions (mm)		444(W) x 411(D) x 88(H)
Weight		7.3Kg
Power Consumption		AC 100~240V, 50/60Hz, Max. 85W, Typical 60W

Trouble Shooting

1. No DVR booting

- Check Power
- Check Power Cord

2. No Image on Monitor

- Check monitor power
- Check monitor & cable condition of DVR
- Check monitor cable port
- Check whether DVR power is On

3. No image of some channel

- Check Camera power
- Check Camera image input
- Check DVR input port
- Check On/Off Activity setup in Screen setup
- Check Covert setup in Monitor setup

4. No Recording

- Check whether HDD is installed from Disk Manager
- Check Record setup

5. No Playback

- Check Record setup
- Check button activation

6. Bright or Dark image overly

- Check Cam
- Camera setup
- Separate image cable and close power cable
- Check Brightness, Contrast setup in Screen setup

7. No activation of Remote control

- Check Remote control battery

- Check Remote control ID
- Check specification of Remote control operation

8. No operation of front button

- Check DVR power
- Check status of Screen Lock

9. No Networking

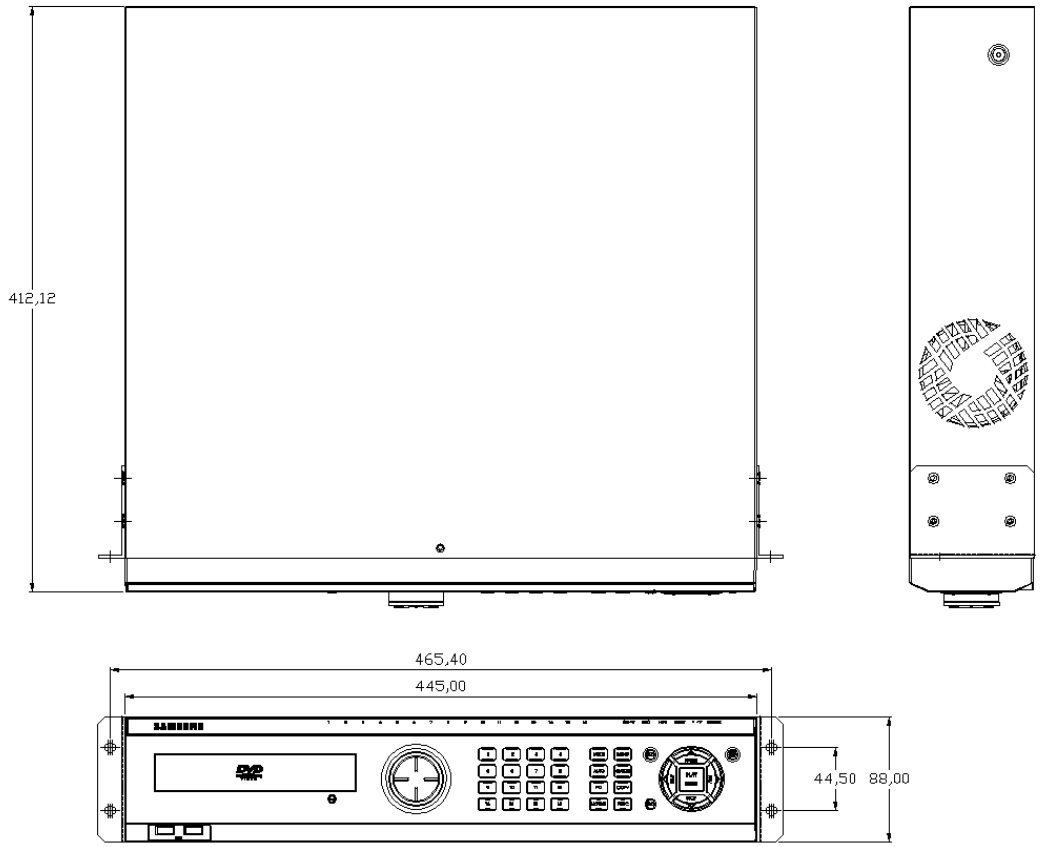
- Check whether network cable is connected properly
- Check DVR IP
- Check PC IP
- Ping Test

10. Case to contact seller

In case of following conditions, stop using product immediately and const to seller for the service after Power off.

- During using, when abnormal work happens to product (ex.: Strange noise, smell or smoke)
- In case of damage to connector of power cable
- In case when rain or water enters to product
- In case when liquid is spitted or other thing is entered
- In case when product does not work as explained in product manual
- In case when product fell down and damaged
- In case when there is outstanding change to performance

Dimensions



SAMSUNG TECHWIN

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